CITY OF MANCHESTER.

REPORT

ON THE

Health of the City of Manchester,

1913.

BY

JAMES NIVEN, M.A., M.B., LL.D.

MANCHESTER:
HENRY BLACKLOCK & CO. LIMITED, ALBERT SQUARE,
1914.

PUBLIC HEALTH OFFICE,
MANCHESTER,
5th August, 1914.

MY LORD MAYOR, ALDERMEN, AND MEMBERS
OF THE COUNCIL.

I have the honour to present to you my Report on the Health of Manchester for the year 1913. The vital statistics for the year are satisfactory. The death-rate shows a decline on previous years, while the birth-rate is somewhat higher than in 1912.

The death-rate from Tuberculosis is less than in previous years.

The development of the Scheme for the treatment of Tuberculosis has entailed much labour on all concerned, though the results promise to be good.

Fresh efforts are being called for in connection with this disease, and new proposals will be submitted. In particular, the home conditions of persons suffering and the influence of occupation must receive much consideration.

The death-rate from infectious diseases was comparatively low, but a great extension of Scarlet Fever occurred, commencing in the district of Cheetham.

Next year the accommodation for infectious diseases will be considerably increased.

A specially trained staff is required to deal effectually with outbreaks of infectious disease, especially with Measles and Whooping Cough.

New subjects are coming into the sphere of administrative effort.

Venereal Disease is now regarded as a proper sphere for public health administration.

Great developments are called for in connection with the protection and fostering of health in children.

Attention may here be directed to the excellent work shown in the reports on the work done under the Midwives Supervising Committee and under the Infant Life Preservation Sub-Committee. The Children's Hospitals and the School for Mothers also aid greatly in protecting the child life of Manchester. But there is abundant scope for additional effort.

The strenuous work which the Sanitary Committee has carried on in the amelioration of housing conditions has been productive of great benefit.

But new endeavours are called for, and are being anticipated, both as regards the improvement of existing conditions and as regards future developments.

In these developments the united counsel of the large departments of the Council will be needed.

A new departure was made in connection with the Housing Scheme of cottage flats on the Barrack Street Site, the space in the rear of the houses being left entirely open as a playground. The impression produced is very favourable.

The social condition of the poorer sections of the community furnishes ground for much anxiety and deliberation, and is a cardinal factor in all schemes of improvement.

Much attention has been directed by the Sanitary Committee to the question of Smoke Abatement, and generally to the contamination in various ways of the atmosphere of Manchester.

An Air-Pollution Advisory Board has been formed as a Sub-Committee of the Sanitary Committee to make inquiries as to the extent and effects of this contamination, and suggest remedies, and they are now engaged with the question. The Chairman of the Sanitary Committee has given evidence before a Departmental Committee, of which the Chairman of the Advisory Board is a member, on the administrative action now pursued and on the measures required.

It has been considered necessary to enlarge the Annual Report in the present year in order to give some account of the additional work which has been imposed by the National Insurance Act. But this report by no means covers the field of Public Health Work, and attention is directed to the Report of the Medical Officer to the Education Committee and to the Report of the Markets Committee.

The Medical Officer of Health desires to express his obligations to the various Officers of the Public Health Department, whose endeavours are seen in the work and in the statistical tables which they have prepared.

It is to be feared that recent developments will not only direct attention and money away from the extension of Sanitary work, but will lead to much poverty and disease.

Should this prove to be the case, much may be done by well-directed personal effort, and more attention in that direction will be needed.

I have the honour to be,

Your obedient Servant,

JAMES NIVEN.

TABLE OF CONTENTS.

LIST OF TABLES.

ANNUAL REPORT.

STATISTICAL.

The following are general statistics for the year 1913:—

Area of the City in acres			20·799
Estimated population at the middle of 1913	Males	351,735	731,556
	Females	379,821	
No. of persons per acre			35
No. of families or separate occupiers at the Census taking, 1911			152,317
Persons married per 1,000 of population in the Manchester, Chorlton, and Prestwich Unions			17·30
Births in the City of Manchester	Males	9,720	19,052
	Females	9,332	
Annual birth-rate per 1,000 of population			25·64
Deaths	Males	6,183	11,718
	Females	5,535	
Recorded annual death-rate per 1,000 of population	Males	17·31	15·77 persons
	Females	14·35	
Deaths under 1 year of age per 1,000 births			128·70
Excess of registered births over deaths			7,334
Estimated increase of population during the year			7,501
Percentage mortality occurring in public institutions			30·81

The usual summary of statistical data is given on the first page of the report. The birth-rate is somewhat higher than in 1912. The death-rate is lower than in any previous year.

The number of deaths of children under 1 year of age per 1,000 births is higher than in 1912, but is lower than in any other year. It is probable that

the great reduction shown is part of a steady decline of infantile mortality, and indicates increased care of infants. The natural rate of increase is higher than in 1912, but is under 10 per 1,000.

Among the most important factors affecting the health of the population are the prices of provisions and coal. There was in 1913 a rise of prices in meat and coal. The number of paupers, however, was diminished. The facts are shown on Table I.

TABLE I.—TOWNSHIP OF MANCHESTER.—PRICES PAID BY THE GUARDIANS FOR FLOUR, BUTCHERS' MEAT, AND COAL, ALSO THE AVERAGE WEEKLY NUMBER OF PERSONS IN RECEIPT OF RELIEF, DURING THE YEARS 1887–1913.

YEAR ENDING	PRICES OF PROVISIONS						PAUPERISM		CITY BIRTH-RATE PER 1,000
	Flour per Sack of 280lbs.	Butchers' Meat, per lb.			Coal, per ton		Average number of Paupers relieved in each week		
		Beef		Mutton	Engine	House	Indoor	Outdoor	
		Coarse	Fine						
1887	25/2 to 30/6	-/3¾	-/6½	-/6½	5/6	8/4	3123	877	33·9
1888	24/- to 29/3	-/3¾	-/6½	-/6½	5/5	8/3	3130	713	33·3
1889	24/11 to 31/2	-/4½	-/6½	-/6½	5/8	8/7	3037	632	33·1
1890	24/9 to 29/11	-/5	-/7	-/7	7/-	9/9	2998	498	31·8
1891	27/3 to 28/11	-/4¼	-/6½	-/6½	8/8	11/2	3118	466	33·8
1892	26/4 to 28/5	-/4	-/6¼	-/6¼	7/6	10/2	3251	551	33·4
1893	21/8 to 25/1	-/3⅞	-/6¼	-/6¼	6/5	10/0	3277	586	33·4
1894	17/2 to 23/9	-/3¾	-/6	-/6	7/1	10/10	3328	395	31·8
1895	15/6 to 21/-	-/3¾	-/6	-/6	5/6	10/3	3343	618	33·4
1896	16/6 to 24/-	-/3⅝	-/5¾	-/5¾	5/7	9/1	3348	533	32·8
1897	17/3 to 33/9	-/3½	-/5⅝	-/5⅝	5/9	8/8	3476	697	32·9
1898	26/7 to 33/8	-/3½	-/5½	-/5½	6/2	8/4½	3519	732	32·3
1899	20/11 to 23/-	-/3½	-/5⅝	-/5⅝	7/5	9/11	3232	597	32·2
1900	20/9 to 22/9	-/3½	-/5½	-/5⅝	11/9¾	14/2½	3189	686	32·4
1901	21/4 to 23/3	-/3⅝	-/5⅝	-/5⅝	11/8	15/2	3403	817	28·7
1902	20/11 to 24/3	-/3⅞	-/5¾	-/5¾	9/3	13/5½	3492	752	33·0
1903	21/10½ to 23/3	-/4⅜	-/6	-/5½	9/-	12/11¼	3521	812	31·7
1904	23/- to 28/6	-/4⅜	-/6	-/6	8/2	11/11	3486	1459	31·1
1905	23/- to 23/9	-/4⅜	-/6	-/6	7/6	10/9	3489	1588	30·1
1906	20/6 to 26/-	-/4¼	-/6	-/6	8/6	11/9	3359	1257	30·1
1907	20/3 to 25/6	-/4	-/6	-/5¼	11/2	14/5	3354	909	29·4
1908	25/6 to 29/6	-/4⅛	-/6	-/5⅜	11/2	14/6	3597	1199	30·0
1909	26/3 to 27/10½	-/3½	-/5½	-/4⅜	9/9	13/3	3875	2049	28·5
1910	26/3 to 27/4	-/3¾	-/6	-/4¾	9/6	13/3	3987	1570	27·8
1911	25/4½ to 28/3	-/3¾	-/6¼	-/4¾	10/4	13/8	3839	1178	25·9
1912	25/10 to 28/6	-/3⅞	-/6¼	-/5½	12/2	16/3	3640	973	25·1
1913	24/9 to 28/9	-/4⅛	-/6⅝	-/5¾	13/1¾	16/4½	3431	685	25·6

The number and distribution of deaths occurring in institutions is shown in Table 2. The number of deaths in 1913 was greater than the number in 1912 in these institutions—Ancoats Hospital, Monsall Hospital, and the Royal Infirmary.

It was smaller in the Manchester Workhouse, Booth Hall Infirmary, and the South Manchester Workhouse.

These deaths constituted 30·81 of the total, a percentage rather more than that of the previous year.

TABLE 2.—POPULATIONS—DEATHS OF MANCHESTER RESIDENTS (INMATES), 1913, IN PUBLIC INSTITUTIONS.

Township	Name of Institution	Census Population, 1911	Deaths, 1913
ANCOATS	Ancoats Hospital	100	226
	Workhouse Casual Wards (Tame Street)	335	...
CENTRAL	New Bridge Street Workhouse	263	1
	St. Mary's Hospital	90	140
	Lock Hospital	29	...
	Eye and Ear Hospital	5	2
	Wood Street Mission	...	...
	Chetham Hospital	...	...
	Skin Hospital	29	1
ST. GEORGE'S	Girls' Home (Charter Street)	...	...
CHEETHAM	His Majesty's Prison	1,048	8
	Boys' Refuge	172	...
	Northern Hospital (late Clinical)	58	45
	Jewish Hospital	28	26
CRUMPSALL *	Manchester Workhouse	3,126	757
	Prestwich Workhouse	583	3
BLACKLEY	Booth Hall Infirmary	331	259
	Litchford Hall	...	1
MOSTON	St. Mary's Home	...	5
	St. Joseph's Home	...	...
	St. Bridget's Orphanage	...	...
NEWTON	Monsall Hospital	265	199
	Little Sisters of the Poor (Culcheth Hall)	...	33
CLAYTON	Clayton Hospital	57	29
ARDWICK	Industrial School	200	...
	Nicholls Hospital	...	...
OPENSHAW	Crossley's "Home of Peace"	6	...
RUSHOLME	St. Joseph's Girls' School	174	...
	St. Mary's Home	...	...
CHORLTON-ON-MEDLOCK	Royal Infirmary	454	467
	St. Joseph's Boys' School	384	...
	Royal Eye Hospital	121	2
	Little Sisters of the Poor (Plymouth Grove)	...	14
	Cancer Hospital	23	18
	Ear Hospital	14	8
HULME	Hulme Barracks	...	1
	Loretto Convent	..	2
MOSS SIDE	"The Home," Whalley Road	...	3
WITHINGTON	South Manchester Workhouse	2,965	978
LEVENSHULME	The Poor Clares Convent	...	1

* Proportion only.

TABLE 2 (continued).—POPULATIONS—DEATHS OF MANCHESTER RESIDENTS, 1913, IN PUBLIC INSTITUTIONS.

Township	NAME OF INSTITUTION	Census Population, 1911	Deaths, 1913
OUTSIDE CITY	Robinson Kay Hospital, Bury	...	2
	Altrincham Hospital	...	2
	Bangor Workhouse	...	2
	Macclesfield Asylum	...	2
	Cheadle Asylum	...	13
	Whittingham Asylum	...	10
	Winwick Asylum	...	31
	Baguley Sanatorium	...	54
	Prestwich Asylum	...	52
	Pendlebury Hospital	...	72
	Salford Royal and Hope Hospitals	...	15
	Haydock Lodge	...	3
	Blackburn, Langho Colony	...	11
	Stockport Infirmary	...	2
	County Asylum, Lancaster	...	53
	Eccles Workhouse	...	5
	Salford Union Hospital	...	7
	Stepping Hill Poor Law Hospital	...	2
	Storthes Hall Asylum, Thurstonland	...	2
	Rochdale Workhouse	...	5
	Middlesbrough Asylum	..	2
	Barnes Convalescent Home	...	4
	Northern Counties Hospital for Incurables	...	2
	Other Hospitals, each having 1 death	...	20
	Other Workhouses, each having 1 death	...	8
	TOTAL DEATHS		3,610

It is usual to give in this place a summary of the number of deaths due to the more outstanding causes. It will be seen that during 1913 there was a marked increase in fatalities ascribed to Diarrhœa, Diseases of the Digestive Organs, and Scarlet Fever, and marked diminution under Respiratory and Heart Diseases, Measles, and Whooping Cough. From Phthisis, however, there was a slight reduction. The mortality from Tuberculosis continues to decline, though more slowly than is desirable or than we may anticipate.

The chief causes of death during the year were as follows :—

	1912	1913
Phthisis	1107	1056
Tuberculosis of Organs other than the Lungs	397	383
Diseases of the Heart	1182	1012
Cerebral Hæmorrhage, Apoplexy, Hemiplegia	477	497
Pneumonia	1358	1178
Bronchitis	1237	1127
Digestive Organs	434	557
Atrophy, Debility (chiefly in infants)	329	350
Old Age	410	435

		1912		1913
Premature Birth		389		389
Nephritis and Bright's Disease		302		301
Convulsions		79		72
Inflammation of the Brain		130		125
Diarrhœa and Dysentery		272		622
Measles	490	936	259	597
Scarlet Fever	51		94	
Whooping Cough	298		139	
Diphtheria	97		105	
Influenza		96		122
Malignant Disease		721		727

If we compare the death-rates per 1,000 of total population under a number of heads with the average for the years 1903–1912, we see that there is an aggregate gain of 2·23 per 1,000 for the year over the average.

The principal gains are in respect of Measles, Whooping Cough, Diarrhœal Diseases, Tuberculous Disease, Diseases of the Nervous System, Diseases of the Circulation, Chest Diseases, and Premature Birth.

The chief losses were in respect of Cancer and Old Age.

Gains in 1913 *per* 1,000 *persons living, as compared with the average for the* 10 *years*, 1903–1912—(See Table K).

Measles	0·24
Scarlet Fever	0·02
Whooping Cough	0·20
Diarrhœal Diseases	0·13
Diphtheria	0·04
Enteric Fever	0·05
Erysipelas	0·01
Pyæmia	0·03
Phthisis	0·32
Tubercular Diseases (other)	0·11
Alcoholism	0·03
Premature Birth	0·11
Nervous Diseases	0·24
Heart and Blood Vessel Diseases	0·23
Bronchitis	0·29
Pneumonia	0·35
Respiratory Diseases (other)	0·05
Digestive System	0·08
Urinary System	0·02
Total	2·55

Losses in 1913.

Influenza	0·01
Cancer	0·09
Old Age	0·12
Total	0·22
Balance of Gain from above Causes	2·33
Do. All Causes	2·23

The following table enables us to examine the death-rates in the different Sanitary Divisions and districts, broken up into their constituent parts, according as the deaths occurred at home, in workhouse hospitals, or in other institutions.

In the Central District not less than one-half, and in Ancoats, St. George's, and Chorlton-on-Medlock considerably over one-third died away from their homes. The death-rates in the Union Hospitals were much higher for the Manchester Township and in the Chorlton-on-Medlock and Hulme districts of South Manchester than for other districts of the City.

TABLE 3.—1913.—DEATH-RATES* IN THE HOMES OF THE PEOPLE, IN WORKHOUSES, AND IN HOSPITALS FOR THE VARIOUS DIVISIONS OF THE CITY.

	Statistical Divisions	Estimated Populations to middle of 1913	Death-rate per 1000 of persons dying in their own homes	Death-rate per 1000 of persons dying in Workhouses	Death-rate per 1000 of persons dying in Hospitals	Total death-rate per 1000	Mean death-rate 1903–1912
City of Manchester. ...		**731,556**	**10·91**	**2·73**	**2·13**	**15·77**	**18·00**
	I. Manchester Township..	112,599	13·94	6·64	3·31	23·89	24·90
	II. North Manchester	205,321	10·42	1·23	1·98	13·63	14·92
	III. South Manchester	413,636	10·33	2·41	1·88	14·62	17·22
I.	Ancoats	40,259	13·94	5·23	3·57	22·74	24·86
I.	Central	21,409	11·59	8·83	3·72	24·14	26·36
I.	St. George's	50,931	14·92	6·82	2·94	24·68	24·27
II.	Cheetham	43,640	7·24	1·11	2·78	11·12	11·86
II.	Crumpsall	10,463	8·75	1·69	0·75	11·20	13·18
II.	Blackley	14,421	8·74	0·89	1·23	10·85	16·31
II.	Harpurhey	17,379	12·12	1·70	1·30	15·13	13·13
II.	Moston	25,487	8·65	0·58	1·31	10·55	11·72
II.	Newton	42,447	12·08	1·34	2·20	15·63	17·65
II.	Bradford	25,460	14·23	1·55	1·97	17·75	19·19
II.	Beswick	12,130	12·50	1·38	3·08	16·96	18·15
II.	Clayton	13,894	10·63	1·20	1·63	13·46	13·70
III.	Ardwick	39,745	13·30	2·53	2·01	17·83	17·39
III.	Openshaw	31,674	12·53	2·02	1·77	16·32	18·76
III.	West Gorton	26,958	11·03	2·70	1·94	15·67	16·75
III.	Rusholme and Kirk. ...	42,393	8·15	1·49	1·51	11·15	14·27
III.	Chorlton-on-Medlock ..	54,504	10·96	4·50	2·58	18·04	19·19
III.	Hulme	63,065	12·43	4·31	2·42	19·16	22·44
III.	Moss Side.....	35,119	8·66	0·81	1·74	11·21	13·29
III.	Withington.....	53,869	7·77	1·01	1·26	10·03	10·46
III.	Gorton	44,555	9·61	1·77	1·68	13·06	16·23
III.	Levenshulme	21,754	7·96	0·77	1·36	10·09	10·71

* In this table, *every death* occurring in a Public Institution has been referred to the District from which the patient originally came.

The figure for infantile mortality is not so low as in the year 1912, in which year summer Diarrhœa caused a comparatively small mortality. Notwithstanding the comparatively high number of deaths from Diarrhœa, however,

infantile mortality is lower than in any other year, and reaches the lowest point for the age period 6–12 months. Additional effort continues to be made both by the Sanitary Authority and by voluntary bodies to limit this mortality, and it is probable that the continued improvement shown reflects the results of these efforts.

TABLE 4.—INFANTILE MORTALITY.

Deaths per 1000 *births at the ages* 0–2 *months,* 3–5 *months, and* 6–11 *months, in successive years.*

YEARS	Months of Age			
	0–2	3–5	6–11	Under 1 year
1891–95 (mean)	82·79	40·99	62·97	186·75
1896	78·71	38·11	59·31	176·13
1897	82·31	42·43	69·89	194·63
1898	86·64	42·72	66·51	195·87
1899	88·14	46·49	70·79	205·42
1900	81·42	42·42	64·91	188·75
1901	88·90	42·96	66·60	198·46
1902	73·49	32·23	45·73	151·45
1903	79·91	36·37	52·25	168·53
1904	84·37	42·01	60·34	186·72
1905	78·42	34·05	46·28	158·75
1906	78·65	35·77	54·68	169·10
1907	73·91	30·46	43·07	147·44
1908	76·20	30·09	46·16	152·45
1909	73·20	25·37	36·98	135·55
1910	67·50	23·90	40·44	131·84
1911	79·50	31·81	44·80	156·11
1912	65·31	19·70	37·26	122·30
1913	68·76	24·42	35·52	128·70

Death-rates—Male and Female.

Table 5 exhibits the death-rates in males and females from 1905 onwards. It appears that the diminution shown in 1913 affects females somewhat more than males.

TABLE 5.

Annual Death-rates—Male and Female.

	Male	Female
1905	19·45	16·31
1906	20·65	17·47
1907	19·52	16·40
1908	19·87	16·47
1909	18·88	16·62
1910	17·37	14·51
1911	18·73	15·64
1912	17·68	14·79
1913	17·31	14·35

TABLE 6.—ANNUAL RATES OF MORTALITY IN MANCHESTER IN THE YEARS 1911, 1912, AND 1913 AT TWELVE GROUPS OF AGES AMONGST PERSONS—MALES AND FEMALES.

GROUPS OF AGES	POPULATION, 1913			DEATH RATES AMONGST PERSONS			MALES			FEMALES		
	Persons	Males	Females	1911	1912	1913	1911	1912	1913	1911	1912	1913
All Ages	731,556	351,735	379,821	17·12	16·18	15·77	18·73	17·68	17·31	15·64	14·79	14·35
0 —	79,325	39,841	39,484	56·32	47·75	47·22	61·61	52·04	52·11	51·01	43·42	42·29
5 —	73,054	36,304	36,750	3·90	4·33	3·85	3·67	4·36	4·18	4·12	4·31	3·54
10 —	68,059	33,858	34,201	2·62	2·50	2·37	2·57	2·70	2·27	2·66	2·29	2·48
15 —	65,669	31,997	33,672	3·68	3·68	3·25	4·12	3·89	3·08	3·27	3·48	3·42
20 —	65,918	30,766	35,152	4·20	3·84	3·52	4·65	4·18	3·36	3·81	3·54	3·67
25 —	132,199	62,290	69,909	5·50	5·31	4·86	6·51	6·33	5·63	4·60	4·40	4·18
35 —	106,129	51,425	54,704	10·03	9·96	9·23	11·64	11·60	10·43	8·51	8·42	8·10
45 —	70,915	34,063	36,852	18·55	18·59	18·41	20·84	22·28	21·91	16·44	15·18	15·17
55 —	42,715	20,065	22,650	36·85	35·54	35·61	43·77	40·74	41·17	30·77	30·95	30·69
65 —	21,873	9,155	12,718	75·03	74·09	70·53	82·72	83·84	83·98	69·50	67·09	60·84
75 —	5,227	1,836	3,391	139·44	148·89	150·87	162·53	160·29	172·12	126·81	142·68	139·35
85 +	473	135	338	233·18	248·37	256·01	248·06	280·30	269·82	227·13	235·47	250·49

Table 6 permits of a comparison of crude death-rates at all ages, and at 12 groups of ages, in persons—males and females respectively. First, as regards persons, it will be seen that the death-rate at ages 0–4 is lower in 1913 than in the two previous years. This is due to the low mortality from Measles and Whooping Cough. At ages 5–10 it is also lower than in 1911 or 1912.

This favourable position is maintained throughout up to the age-group 55–64, and is due chiefly to a reduced mortality from Respiratory Diseases. It is nearly the same as in 1912 at ages 55–64, and is again lowest at ages 65-74. Above the age of 75 it is higher than in either of the years 1911–1912.

The improvement in the death-rate of females in 1913 is greater than that of males.

The male death-rate is, in fact, higher than in 1912 at the age-period 0–4, and at all ages above 55 ; while that of females exceeds the death-rate in 1912 only at the age-periods 10–14, 20–24, and over 85, the excesses being comparatively small.

Statistics of the Sanitary Divisions of the City.

These are given in Table G in the Appendix.

The highest birth-rates occur in Ancoats, St. George's, Bradford, and Beswick, following nearly the same order as in 1912.

The highest death-rates affect the three districts of the Manchester Township, where they are more than double the death-rates prevailing in Cheetham, Crumpsall, Blackley, Moston, Rusholme, Moss Side, and Withington.

The natural rate of increase is much higher in North Manchester than in South Manchester, and in South Manchester than in the Central Districts. Roughly speaking, it is highest in the industrial districts of the City.

Table H permits a comparison to be made between the infantile mortalities in 1913 and those holding in the previous 10 years 1903–1912.

It will be seen that the improvement manifested in 1913 is general, St. George's being the chief exception.

From Table L it will be seen that the proportion of uncertified deaths (viz., 0·3 per cent.) was lower than in 1912, the highest proportion (viz., 0·6 per cent.) being in St. George's, Cheetham, Ardwick, and Moss Side.

Causes of Death.

The death-rates of persons at all ages from the principal causes of death are shown in Tables E, F, and K in the Appendix.

Table E deals chiefly with the death-rates from Zymotic Diseases.

Table F summarises the other causes of death.

Both furnish a comparison of the death-rates extending over a long series of years—in Table E since 1871, in Table F since 1881.

Death-rates from Zymotic Diseases.

Smallpox, it will be seen, exacted a fairly heavy mortality in the quinquennia 1871–75 and 1876–80.

Notwithstanding, however, the alarm which the advent of Smallpox inspires, and the administrative effort which it calls for, the death-rate from this cause has not reached a serious amount in any quinquennium subsequent to 1880, and a clear record is presented by the last 10 years. It is, however, only by constant vigilance, especially at the ports, and a good system of internal communication, that this result is attained. The disease makes its appearance from time to time in the surrounding towns, and has been ascribed to infected cotton imported from Egypt. This theory requires to be supported by further evidence. It is not likely that any great number of cases can arise in this manner, as the infection of smallpox under favourable circumstances dies out rapidly. Still, the possibility of its introduction in this way cannot be denied, and calls for special preventive efforts.

The death-rate from Measles reached its lowest point in 1913. It is probable that the death-rate from this disease keeps up owing to the manner in which it spreads through the infant departments of elementary schools, the deaths occurring chiefly amongst the secondary cases in younger children infected at home.

It may be assumed that much good is effected by notification to the Head Teachers, by the visits of the School Attendance Officers and of District Inspectors of Nuisances, and by the instruction imparted from the Public Health Office and the schools.

Much more than this is wanted, however. A staff of Nurses is required during periods of prevalence, to insist on isolation and show how it can best be carried out, and even more for the purpose of showing what precise measures of nursing and care are needed to give the child an improved chance of survival.

It has been shown that the high death-rate from Measles is due to lung complications, and from an article by Dr. Thursfield in the Report of the Medical Officer to the Local Government Board for 1912–13, it would appear that the pulmonary complications are largely septic in character.

The Nurses are required to educate the parents in cleanliness, to show them how to do the best for the children when pulmonary trouble has set in, and also how to carry out medical instructions.

It is possible, also, that if provision were made for the treatment of pulmonary cases, the mortality from Broncho-pneumonia due to Measles would be reduced.

From Whooping Cough also the death-rate reaches its lowest point in this year. The death-rate from this cause has declined in recent years more decidedly than has that from Measles. It is difficult to say to what this should be ascribed—to change of type, to the greater interest taken in infants under 12 months of age, or to improved treatment. In any case it would seem to indicate that by increased attention to preventive measures and to treatment further improvement may be secured.

From Scarlet Fever the decline in the death-rate has been much greater. It can scarcely be doubted that the action taken by Public Health Authorities, whether by the provision of isolation hospitals or by other measures, has contributed largely to this result. There can be no doubt that the type of Scarlet Fever has become milder for a very great number of years. This would be likely to happen if an effort were made to isolate the more serious cases, whether in hospital or at home, leaving the milder forms less carefully attended to ; and conversely, in proportion, as the more severe cases are less promptly and sufficiently isolated, the disease tends to spread and become more severe.

Owing to the utilisation of Baguley Sanatorium in the treatment of cases of Pulmonary Tuberculosis, and the unavoidable delay in providing corresponding accommodation for fever at Monsall Hospital, a large number of cases which would otherwise have been removed to hospital had to remain at home. Whether, as a consequence or otherwise, the disease extended over the district of Cheetham in 1913, and during the present year has become prevalent over the whole City, so far it has retained its mild character, so that the death-rate is not materially greater than it was in the year 1910.

From Enteric Fever the death-rate remains at the lowest point yet reached, though it has been at the same figure in three previous years. The death-rate from this disease has not declined in Manchester as much as it has in England and Wales generally.

From Diarrhœa the death-rate was higher than in other recent years, except in 1911. This was due to the long continuance of warm weather in the summer and autumn of last year. House flies were very numerous.

On investigation of the conditions prevailing in the manure receptacles of the City, it became manifest that, in many instances, horse manure was not removed within the prescribed period of one week, and, further, that it was not entirely removed. Moreover, if any fault existed in the brickwork of a manurestead, the pupæ or shells of pupæ were to be found in the crevices. Where manure was stored in carts, the pupæ were found on the spokes of the wheels or under the carts. There is also reason to believe that the requirement relating to the removal of manure was, whether intentionally or not, evaded by the removal of smaller to larger collections of manure within the City. It will be necessary to revise the bye-laws in this particular.

Altogether, it is evident that great vigilance will be required if the housefly is to be prevented from multiplying.

A remarkable experience in the district of Bradford occurred in the month of March during the present year, and was brought to my notice by Miss Howard. The oldest member of a neglected family of children was feeble-minded, and slept on a straw mattress on a sofa downstairs, on to which she passed her urine. This sofa was found to be crawling with the larvæ of the housefly, while the pupæ were numerous on the drier parts of the sofa.

There were numerous flies on the adjoining wall and in the room.

It is possible that in ways like this the propagation of the housefly is tided over the cold months, and that it does not rest simply on the continuance of odd flies in warm rooms.

The percentage of deaths resulting in inquests in 1913 was higher than in other years.

Turning to Table F we find that the Cancer death-rate was slightly lower than in 1912, while the death-rate in this year was in turn lower than in 1911. It is to be hoped that this diminution is not of a merely temporary character. It is not possible to say how far it is owing to greater vigilance in the detection of Cancer in its earlier stages, and to the consequent removal of cancerous growths. But it is probable that such improvement as has occurred is due to treatment rather than to arrest of the upward tendency of the death-rate.

A theory has been put forward by a Professor in the University of Montpellier that Cancer is produced by the action of a ferment elaborated by a specific organism existing in certain waters, and that wine drinkers are comparatively immune. Should this view prove to have any foundation, it may be possible to do something towards reducing the death-rate by preventive means.

The death-rate from Phthisis shows a distinct reduction on previous years. On the other hand there is a slight increase in the death-rate ascribed to Abdominal Tuberculosis. Other forms of Tuberculosis, however, yield a death-rate which stands at the lowest point previously recorded.

From Diseases of the Nervous System, and also from Diseases of the Circulation, the death-rate is near the lowest point. This is also the case with Diseases of the Respiratory System.

From Diseases of the Urinary System the death-rate is lower than in other recent years. This is also the case with Puerperal Fever, from which, however, the mortality is still far too high.

The death-rates in 1913 are comparatively high from Diseases of the Digestive System, Diseases of the Generative System, and Parturition.

The most conspicuous facts are the continued reduction in the death-rates from Tuberculosis of the Lung and from Cancer.

Table K furnishes a comparison of the death-rates from a number of causes at all ages in the City as a whole, with those holding in its main divisions, and also with those from the same causes for the 10 years 1903–1912. There are comparatively few causes of death which do not show a marked improvement for 1913 on the previous 10 years. Amongst the causes of death in which improvement is most conspicuous are Enteric Fever, Phthisis, Bronchitis, Pneumonia, other forms of Respiratory Disease, and Diseases of the Nervous System.

Comparing the three main divisions of the City in respect of the causes of death in 1913, we see from Table K that while the death-rate in the Manchester Township was comparatively low in 1913, it is far in excess of the death-rates for North and South Manchester. The table shows that this excess is most conspicuous under Measles, Diarrhœa, Tuberculous Disease, and Respiratory Diseases generally.

These are general relationships, and it is a very striking circumstance that, as social conditions get worse, the increasing brunt of mortality falls mostly on the lungs rather than on the circulatory organs.

There is also a marked difference under the heads of Alcoholism and Nervous Diseases, though the total mortality ascribed to alcoholism is small.

Table M enables us to pursue the comparison for the whole City, and, between its divisions, into six groups of ages.

When the death-rate at ages under 5 is compared with that holding in the 10 years 1901–10, there will be seen to be an improvement of 24·77 per cent. ; at ages 5–14 the improvement is 13·97 per cent. ; at ages 15–24 it is 9·36 per cent. ; at the period 25–44, 23·74 per cent. ; at 45–64, 17·59 per cent. ; at ages above 65 it is 14·43 per cent.

At ages under 5 years, the year 1913 shows to special advantage in respect of Measles, Whooping Cough, Tuberculous Disease, Circulatory Disease, Diseases of the Nervous System, and Diseases of the Digestive System. There is also a marked improvement under Respiratory Disease.

At ages 5–14 (school age) marked improvement appears under Diseases of the Respiratory System, Circulatory Disease, and Disease of the Nervous System. There is also improvement under Tuberculous Disease, Enteric Fever, Diphtheria, Whooping Cough, and Scarlet Fever.

At ages 15–24 the greatest improvement appears under Diseases of the Respiratory System, Circulatory Diseases, and Enteric Fever.

At ages 25–44 the improvement in 1913 is general, and is manifest under Tuberculous Disease and Diseases of the Nervous, Circulatory, Respiratory, Digestive, and Urinary systems.

At ages 45–64 the same observation applies.

Above the age of 65 there is marked improvement under Diarrhœal Diseases and Diseases of the Respiratory and Circulatory Systems, but the death-rate is higher from malignant disease.

Comparison of the death-rates in the main divisions of the City shows that the excess of the death-rate from all causes in the Manchester Township is much greater at ages under 5 years and at the age-period 25–44 years than it is at other age periods, and is least marked at ages 15–24.

At ages under 5 years the excess in the death-rates of the Manchester Township is most marked from Measles, Diarrhœa, and Respiratory Disease. But it is also shown under Scarlet Fever, Diphtheria, and Diseases of the Nervous System.

At ages 5–14 the excess affects Measles, Tuberculous Disease, and Diseases of the Respiratory and Digestive Systems.

At ages 15–24 the excess only affects Tuberculous Disease.

At ages 25–44 the death-rates of the Manchester Township are in excess under Tuberculous Disease, and also under Respiratory, Digestive, Nervous, Circulatory, and Urinary Diseases.

At ages 45–64 the excess affects the same classes of disease.

But while at 25–44 the excess was most marked under Diseases of the Respiratory System, it is now greatest under Tuberculous Disease.

At ages above 65 the excess affects chiefly Tuberculous, Respiratory, Nervous, and Urinary Diseases.

Comparing North Manchester and South Manchester, we find that under 5 years of age North Manchester suffers more from Diarrhœa than South Manchester, and much less from Tuberculous Disease.

At ages 5–14 North Manchester suffered more than South Manchester from Scarlet Fever, Diphtheria, Heart Disease, Nervous Disease, and Disease of the Respiratory System.

At ages 15–24 North Manchester suffered more from Respiratory and Circulatory Disease, but less from Tuberculous Disease than South Manchester.

At ages 25–44 North Manchester had a lower death-rate than South Manchester from Tuberculous Disease and from Diseases of the Digestive and Urinary Systems, but a higher death-rate under Heart Disease.

At ages 45–64 North Manchester had the lower death-rate from Tuberculous Disease, Malignant Disease, Disease of the Nervous System, and Disease of the Respiratory System, but a higher death-rate from Diseases of the Circulation and from Disease of the Urinary System.

At ages 65 and upwards North Manchester had a lower death-rate than South Manchester from Tuberculous Disease, Diseases of the Nervous System, and Diseases of the Urinary System, but a higher death-rate from Respiratory Diseases and from Diseases of the Digestive System.

Causes of Death in Infancy.

These are summarised in Table J in the Appendix, and are given in more detail in the return to the Local Government Board (Table 7), and also in Table D in the Appendix, which records the principal causes of death in the first 5 years of life, and presents a view of the course of the mortalities from these causes.

In the Annual Report for 1912 (page 9) the corresponding tables since 1891 were summarised for purposes of comparison. From these figures it appears that the causes of death under which improvement is shown in 1913 are to a considerable extent of a fluctuating character, such as Measles, Whooping Cough, and other infectious diseases.

There is, however, some improvement under Lung Diseases, Prematurity, and Atrophy.

The decline in the mortality ascribed to Convulsions continues, as does that assigned to other Nervous Diseases.

On the other hand, the rate of mortality from Diarrhœa is fairly high, while that ascribed to Tuberculous Disease shows an increase as compared with the two previous years.

It is probable that the diminutions indicate and are due to greater care bestowed in the management of infants.

The Diarrhœal mortality does not appear to be so easily influenced, but the difficulties are known, and it is, therefore, a question of sufficient effort.

As regards the increase in the death-rate from Tuberculous Disease, it is possible that this may be due to the increase in the proportion of cows affected with Tuberculosis of the Udder. In any case the increase is not great. It is probable that, with sustained effort, and in view of the increased attention given to the diseases of infancy, the decline in infantile mortality will continue, though with remissions.

On the whole the indications point to a continued fall in the death-rate. The expectation was that the death-rate from Tuberculosis of the Lungs would rise, as a result of the increased number of cases notified. It has, on the contrary, shown a substantial fall, while the fall under other diseases of the Respiratory System continues. These diseases are of two kinds, and, although one shades into the other, their essential causes are different.

It would be a very difficult question to resolve how far Bronchitis and Pneumonia are respectively influenced by the soot and dust in the atmosphere of Manchester. It is, however, probable that the death-rate from Pneumonia is in closer association with social conditions, and with domestic want of cleanliness, than is the death-rate from Bronchitis.

It may be inferred from the research on Measles carried out for the Local Government Board that the Pneumonia of childhood is largely due to Sepsis, and, in any case, Pneumonia is a disease amenable to preventive measures.

Table 7.—Infant Mortality.

Manchester District.

1913.—*Deaths from stated causes at various Ages under 1 Year of Age.*

Causes of Death	Under 1 week	1-2 weeks	2-3 weeks	3-4 weeks	Total under 4 weeks	4 weeks and under 3 months	3 months and under 6 months	6 months and under 9 months	9 months and under 12 months	Total Deaths under 1 year
All causes — Certified	488	136	119	92	835	472	465	349	326	2,447
All causes — Uncertified	4	..	..	..	4	..	..	1	..	5
Small-pox	..	..	..	..	..	..	..	..	..	..
Chicken-pox	..	..	..	..	..	..	..	1	1	2
Measles	..	..	..	1	1	4	3	13	49	70
Scarlet Fever	..	..	..	..	..	..	..	..	2	2
Whooping Cough	..	..	1	..	1	10	16	17	18	62
Diphtheria and Croup	..	..	..	..	..	..	..	4	4	8
Erysipelas	..	..	..	..	..	3	2	..	..	5
Tuberculous Meningitis	..	1	1	..	2	4	9	9	11	35
Abdominal Tuberculosis	..	..	..	..	..	3	16	8	4	31
Other Tuberculous Diseases	..	..	..	..	..	4	6	7	6	23
Meningitis (*not Tuberculous*)	..	..	2	..	2	4	10	9	5	30
Convulsions	15	6	9	2	32	11	7	5	4	59
Laryngitis	..	..	..	..	..	1	2	..	1	4
Bronchitis	4	3	3	3	13	46	42	44	24	169
Pneumonia (all forms)	1	4	2	6	13	28	61	92	79	273
Diarrhœa	1	1	6	3	11	46	70	35	28	190
Enteritis	..	3	4	10	17	60	93	37	35	242
Gastritis	1	4	2	1	8	14	6	10	4	42
Syphilis	3	3	8	5	19	14	3	..	1	37
Rickets	..	..	..	..	..	3	2	3	5	13
Suffocation, overlying	17	5	4	9	35	36	9	3	2	85
Injury at birth	29	..	..	1	30	..	..	..	..	30
Atelectasis	49	4	2	2	57	4	..	..	..	61
Congenital Malformations	26	17	4	5	52	16	5	3	..	76
Premature Birth	260	39	26	23	348	34	5	2	..	389
Atrophy, Debility, and Marasmus	55	30	34	14	133	91	59	23	17	323
Other Causes	31	16	11	7	65	36	39	25	26	191
Totals	492	136	119	92	839	472	465	350	326	2,452

Nett Births in the year { legitimate, 18,283. illegitimate, 769.

Nett Deaths in the year of { legitimate infants, 2,276. illegitimate infants, 176.

The following table, prepared from the Annual Summary of the Registrar-General, gives a comparison of the death-rates and infantile mortalities for 17 of the principal large towns. It will be seen that 7 large towns have a higher crude death-rate than Manchester in the year 1913, while 8 have a higher infantile mortality. Although the position of the City is slowly improving, the change is necessarily a gradual one :--

TABLE 8.—1913.—DEATH-RATES AND INFANTILE MORTALITY IN CERTAIN LARGE TOWNS.

Town	Death-rate	Deaths under one year per 1000 Births
Dublin	20·66	154·2
Belfast	19·31	144·3
Stoke	18·95	169·8
Liverpool	18·24	131·3
Glasgow	17·32	129·1
Salford	16·04	136·4
Sheffield	15·99	128·3
Manchester	15·77	128·7
Leeds	15·66	133·6
Newcastle	15·29	121·3
Bradford	15·18	127·5
Hull	15·01	128·1
Birmingham	14·96	128·7
Edinburgh	14·46	101·1
Nottingham	14·37	129·8
London	14·20	105·0
Leicester	13·55	119·5

INFECTIOUS DISEASES.

The diseases included in the Infectious Disease (Notification) Acts, 1889 and 1899, are as follows: Smallpox, Scarlet Fever, Diphtheria, Membranous Croup, Typhus Fever, Enteric or Typhoid Fever, Relapsing Fever, Continued Fever, Puerperal Fever, Erysipelas, and Asiatic Cholera, to which have been added Ophthalmia Neonatorum, Cerebro-Spinal Fever, and Poliomyelitis. The following cases were notified in 1913, and the numbers are compared with the average of the previous ten years:—

	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	Aver'ge for 10 Years	1913
Smallpox	422	134	6	5	5	...	...	...	..	1	57	1
Scarlet Fever ...	2,012	2,063	1,975	3,075	2,732	2,893	3,700	2,324	1,939	1,840	2,455	3,715
Diphtheria..... Memb. Croup	620	474	530	551	499	546	598	498	472	474	526	650
Typhus Fever ...	...	...	...	...	1	...	20	2	10	...	3	...
Enteric Fever ...	387	325	345	384	265	393	369	358	256	242	332	292
Relapsing Fever	...	...	...	1	...	...	...	...	...	...	...	...
Puerperal Fever	30	42	82	106	95	101	84	131	130	124	93	124
Erysipelas	291	266	351	383	337	364	371	407	442	396	361	412
Ophthalmia Neonatorum	...	...	...	...	...	...	...	246	443	503	...	331
Cerebro-Spinal Fever	...	...	...	...	...	...	...	...	...	6	...	1
Poliomyelitis ...	...	...	...	...	...	...	...	...	...	55	...	6
	3,762	3,304	3,289	4,505	3,934	4,297	5,142	3,966	3,692	3,641	3,827	5,532

The number of deaths for eleven years from the more common diseases is shown in the following table, also the average for the previous ten years :—

From	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	Aver'ge for 10 Years	1913
Measles	345	425	231	475	229	366	396	291	337	490	359	259
Scarlet Fever ...	97	85	78	108	102	92	164	74	45	51	90	94
Diphtheria..... Memb. Croup	136	99	127	119	106	123	113	101	88	97	111	105
Enteric Fever ...	93	66	55	83	37	75	88	61	51	47	66	48
Smallpox	24	9	...	...	...	...	...	...	...	1	3	...
Influenza	62	97	95	90	111	132	135	80	80	96	98	122
Whooping Cough	213	280	195	193	314	220	129	397	140	298	238	139
	970	1,061	781	1,068	899	1,008	1,025	1,004	741	1080	965	767

SMALLPOX.

There was one case of Smallpox notified during the year 1913.

SCARLET FEVER.

By Dr. W. St. C. McClure.

Scarlet Fever was unusually prevalent throughout the City during 1913. The following table shows the course of the disease :—

Table 1.—Scarlet Fever, 1913.—Attacks in Weeks according to Date of Rash.

First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
Jan. 4	19	April 5	27	July 5	66	Oct. 4	155
,, 11	37	,, 12	34	,, 12	72	,, 11	149
,, 18	58	,, 19	41	,, 19	69	,, 18	169
,, 25	41	,, 26	39	,, 26	47	,, 25	145
Feb. 1	33	May 3	42	Aug. 2	51	Nov. 1	152
,, 8	30	,, 10	38	,, 9	43	,, 8	116
,, 15	33	,, 17	30	,, 16	44	,, 15	162
,, 22	40	,, 24	46	,, 23	62	,, 22	149
March 1	27	,, 31	44	,, 30	61	,, 29	120
,, 8	33	June 7	54	Sept. 6	78	Dec. 6	97
,, 15	31	,, 14	46	,, 13	85	,, 13	102
,, 22	31	,, 21	53	,, 20	97	,, 20	100
,, 29	25	,, 28	74	,, 27	148	,, 27	79
						Jan. 3	91
Total...	438	Total...	568	Total...	923	Total...	1786

City Total, 3,715.

During 1913 the rate of attack from Scarlet Fever was higher than in the towns used for comparison, and was highest in North Manchester.

Table 2.—Scarlet Fever Attacks, 1913.—Rates per 1,000 living, as compared with the Mean for Five Years.

	1908	1909	1910	1911	1912	Mean	1913
Twelve Towns *	3·58	4·16	3·83	3·43	2·75	3·55	3·47
City of Manchester †.....	4·39	6·15	3·46	2·91	2·74	3·93	5·40
Manchester Township	4·63	4·13	1·95	1·72	2·74	2·99	4·30
North Manchester	4·91	6·43	3·90	2·90	3·38	4·30	8·64
South Manchester †	3·98	6·71	3·74	3·31	2·38	4·02	3·89

* These are Blackburn, Bolton, Bradford, Burnley, Halifax, Hull, Leeds, Liverpool, Oldham, Preston, Salford, and Sheffield.

† **Exclusive of Withington.**

ATTACKS PER 10,000 OF THE POPULATION IN 1913 AND 22 PREVIOUS YEARS.

Year ..	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901
	48	50	58	43	39	44	33	16	27	46	49

Year ...	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
	42	36	37	34	52	43	44	62	35	29	27	54

The following figures show the distribution of the attacks and the proportion treated in Hospital. The following districts are seen to have been most severely visited in 1913 :—Cheetham, Clayton, Harpurhey, West Gorton, Levenshulme, and Newton.

TABLE 3.—1913—SCARLET FEVER ATTACKS IN DISTRICTS, WITH ATTACK RATE, CASE FATALITY PER CENT., AND REMOVALS TO HOSPITAL PER CENT.

	DISTRICTS	ATTACKS	ATTACK RATE PER 1,000 LIVING	† CASE FATALITY PER CENT.	REMOVALS TO HOSPITAL PER CENT.
Manchester Township	Ancoats	108	2·64	3·7	67·6
	Central	110	5·06	3·6	81·8
	St. George's	274	5·30	3·3	68·2
North Manchester	Cheetham	736	16·60	2·4	73·6
	Crumpsall	93	8·75	1·1	34·4
	Blackley	84	5·73	2·4	48·9
	Harpurhey	161	9·12	1·9	64·0
	Moston	146	5·64	1·4	52·8
	Newton Heath	268	6·22	2·6	55·6
	Bradford	117	4·52	2·6	68·5
	Beswick	59	4·79	1·7	71·2
	Clayton	139	9·85	1·4	43·2
South Manchester	Ardwick	137	3·39	1·5	57·0
	Openshaw	179	5·56	2·2	43·6
	Gorton (West)	223	8·14	4·0	53·3
	Rusholme & Kirk.	148	3·44	2·7	50·7
	Chorlton-on-Med.	137	2·47	2·2	53·4
	Hulme	127	1·98	3·2	59·9
	Moss Side	102	2·86	2·9	41·2
	Gorton	214	4·73	1·9	49·5
	Levenshulme	153	6·92	2·0	15·0
City of Manchester		**3,715**	**5·40**	**2·5**	**57·7**

† Corrected; the fatal cases are those actually occurring amongst the cases notified.

The case fatality is lower than the mean for the past ten years.

Year	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	Mean	1913
Case fatality per cent.	4·7	4·1	3·5	3·6	3·6	3·6	4·1	3·4	1·8	2·8	3·5	2·5

The comparative severity of attacks in infancy is again shown in the following table :—

TABLE 4.

SCARLET FEVER.—NUMBER OF ATTACKS, AND OF DEATHS; ALSO THE CASE FATALITY PER CENT. AT DIFFERENT AGES, FOR THE TWENTY-TWO YEARS 1891–1912, AND FOR 1913.

AGES	1891-1912			1913		
	ATTACKS	DEATHS	CASE FATALITY PER CENT.	ATTACKS	DEATHS	CASE FATALITY PER CENT.
Under one year ...	515	94	18·2	33	3	9·1
1 to 2 years ...	1,632	251	15·4	87	10	11·5
2 to 3 ,, ...	3,241	381	11·8	217	13	6·0
3 to 4 ,, ...	4,456	430	9·7	266	10	3·8
4 to 5 ,, ...	4,991	361	7·2	403	15	3·7
5 to 6 ,, ...	5,278	225	4·3	437	9	2·1
6 to 7 ,, ...	4,746	153	3·2	426	6	1·4
7 to 8 ,, ...	4,117	103	2·5	348	6	1·7
8 to 9 ,, ...	3,368	63	1·9	251	4	1·6
9 to 10 ,, ...	2,796	52	1·9	239	4	1·7
10 to 15 ,, ...	7,988	118	1·5	601	5	0·8
15 to 20 ,, ...	2,416	48	2·0	183	4	2·2
20 to 25 ,, ...	1,063	18	1·7	104	1	1·0
25 to 35 ,, ...	1,006	33	3·3	90	1	1·1
35 to 45 ,, ...	258	9	3·5	22	1	4·5
45 to 55 ,, ..	78	3	3·8	7	...	...
55 to 65 ,, ...				...	...	...
Over 65 ,, ...				1	...	...
All Ages	47,949	2342	4·9	3,715	92	2·5

Table 5 gives a comparison of the death-rates from Scarlet Fever in different localities, and shows that the death-rate was slightly above that of the country generally.

TABLE 5.—SCARLET FEVER MORTALITY, 1913.—RATE PER 1,000 LIVING, COMPARED WITH MEAN OF FIVE YEARS.

	1908	1909	1910	1911	1912	Mean	1913
England and Wales.....	0·08	0·09	0·06	0·05	0·05	**0·07**	0·06
95 Great Towns	0·10	0·11	0·08	0·06	0·06	**0·08**	0·07
London.....	0·11	0·08	0·04	0·04	0·04	**0·08**	0·04
Manchester City.....	0·16†	0·27†	0·12‡	0·06	0·07	**0·17**	0·13
Manchester Township	0·18	0·25	0·15	0·08	0·13	**0·20**	0·16
North Manchester	0·14	0·28	0·13	0·08	0·09	**0·18**	0·19
South Manchester	0·16†	0·28†	0·08‡	0·05	0·04	**0·15**	0·09
146 Smaller Towns	0·07	0·09	0·06	0·06	0·05	**0·08**	0·05
Rural Districts.....	0·05	0·06	0·05	0·04	0·04	**0·06**	0·05

† Exclusive of Moss Side and Withington.

‡ Exclusive of Moss Side, Withington, Gorton, and Levenshulme.

The percentage of cases removed to hospital in each year since 1895 has been as follows :—

TABLE 6.—SCARLET FEVER.

		1895	1896	1897	1898	1899	1900	1901	1902	1903
Manchester Township.	Removal to Hospital, per cent...	82·0	83·5	89·2	85·8	87·2	88·0	88·5	88·8	91·9
	Death-rate per 1,000	0·37	0·41	0·27	0·11	0·08	0·16	0·24	0·21	0·14
Entire City.	Removal to Hospital, per cent...	71·3	73·9	79·7	73·1	74·4	80·9	82·3	81·2	83·4
	Death-rate per 1,000	0·33	0·37	0·23	0·12	0·08	0·19	0·23	0·27	0·17

		1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Manchester Township.	Removal to Hospital, per cent..	88·6	82·3	75·1	74·5	72·7	66·1	79·6	88·0	89·2	71·1
	Death-rate per 1,000	0·17	0·15	0·27	0·20	0·18	0·25	0·15	0·08	0·13	0·16
Entire City.	Removal to Hospital, per cent..	79·8	72·9	66·3	65·0	68·8	58·1	74·5	76·0	77·5	57·7
	Death-rate per 1,000	0·15	0·13	0·19	0·18	0·16	0·27	0·10	0·06	0·07	0·13

The incidence of Scarlet Fever, which was unusually high throughout the year, assumed epidemic proportions during the third and fourth quarters.

All districts were not equally affected, the incidence in Cheetham being far in excess of that in the remaining districts. Indeed, the epidemic was mainly confined to Cheetham until the last few months of the year, when it became widespread over the greater part of the City.

An interesting chart prepared in the office by Mr. Egerton, but omitted here to economise space, shows the total incidence in Cheetham, and the extent to which the various schools in the district were affected.

The chart shows two waves of excessive incidence, the one culminating in July, the other in October, the latter being an exaggeration of the normal autumnal curve. The trough, which reached its lowest point during the week ending August 16th, coincided closely with the school holidays.

The schools chiefly affected were Waterloo Road, Southall Street, Derby Street, St. John's, and St. Luke's.

From the following figures it will be seen that, during the first part of the year, Waterloo Road and Southall Street were principally affected, and during the latter part of the year, infection having become more general, Derby Street, Waterloo Road, Southall Street, and St. Luke's Schools were more particularly involved :—

School	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Waterloo Road	10	12	5	3	8	7	13	23	1	5	87
Southall Street	1	12	7	30	31	12	20	18	8	10	149
Derby Street	—	7	5	13	17	11	16	31	17	17	134
St. John's	—	—	—	10	5	—	1	6	3	4	29
St. Luke's	1	—	2	2	7	—	1	20	14	2	49
Total number of cases in Cheetham	20	40	38	87	100	51	76	169	66	62	713
Percentage of cases in Scholars	60	77	52	66	68	58	67	58	64	61	62

A thorough investigation of all possible sources of infection was carried out, but no single cause of spread, such as infected milk supply, was demonstrable. For the most part infection was due to personal contact with those already attacked, and, as usual, overlooked and unrecognised cases played a prominent part in spreading the disease.

Removal to Hospital.

The percentage number of cases removed to hospital was considerably under the average, owing, in part, to the tax put upon the hospital accommodation by the undue prevalence of infection.

That early isolation is of the utmost importance was shown in the Annual Report for 1904.

The following table, which deals with cases of Scarlet Fever during the five years 1909 to 1913, shows the number of susceptibles exposed to infection, and the number infected according to the time which had elapsed after the appearance of the rash when the primary case was removed to hospital :—

Number of days after Rash, primary case removed to hospital	Number of Susceptibles	Number Infected	Per cent.
0	1,108	65	5·8
1	3,376	227	6·4
2	2,713	203	7·5
3	1,671	183	10·9
4	878	99	11·2
5	587	89	15·1
6	379	58	15·2
7 or more	1,004	193	19·2

If overlooked cases were included, the percentage of susceptibles infected when removal was delayed for 7 days or longer would be increased to about 35.

The above figures show that if all cases were removed to hospital within one day of the rash the spread of infection would be reduced to a minimum. Such immediate action is not as a rule possible, owing to the delay which occurs between the onset of illness and the receipt of the notification.

Overlooked Cases.

An overlooked case is taken to mean one that, so far as could be ascertained, was not isolated for at least one week after the onset of illness.

During the year, 208 such cases were discovered, and in connection with these 146 secondary cases occurred. During the past five years the number of overlooked cases of which we became cognisant was 961. The number of susceptibles under 15 years of age exposed to infection in the homes of these cases was 1,664, of whom 588 were infected. Overlooked cases, therefore, are a serious hindrance to the effective control of the disease.

Return and Recovery Cases.

71 cases, or 3·3 per cent., of those discharged from hospital gave rise to 74 secondary cases.

The intervals which elapsed between the discharge of the infecting case and the occurrence of the return case were as follows :—

0–1 week	1–2 weeks	2–3 weeks	3–4 weeks	1–2 months	2–3 months	3 months or more
17	20	12	7	11	6	5

These intervals are considerably greater than are found in recovery cases. It therefore appears that patients from hospital are capable of retaining the infection for a longer period than those who have been treated at home.

That the number of return cases which arises depends upon the number of susceptibles exposed to infection by the returning case is what one would expect. Obviously an infectious person returning to a household containing no susceptibles would give rise to no secondary cases in that household. The following figures, which relate to Scarlet Fever cases during the five years 1909 to 1913, bear out this statement :—

1,380 cases returning to 1,063 susceptibles in houses with less than one person per room produced 55 return cases, or 3·9 per cent. ; 2,927 cases returning to 4,661 susceptibles in houses with 1 to 1·5 persons per room produced 163 return cases, or 5·5 per cent. ; and 2,062 cases returning to 5,598 susceptibles in houses with an average of 1·5 or more persons per room were responsible for 150 return cases, or 7·2 per cent.

Regarding recovery cases, 11 such occurred during 1913. As the number of remaining susceptibles in home cases is very much less than in hospital cases, it is probable that if all cases were kept at home the recovery case rate would rise.

Although infection may be more frequently retained by patients treated in hospital, the factor which determines the number of return or recovery cases is the number of susceptibles to which the patient returns after release from isolation.

DIPHTHERIA AND MEMBRANOUS CROUP.

By Dr. W. St. C. McClure.

The usual tables for this disease are again given.

The following table shows the number of cases notified each year for the last ten years :—

1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
—	—	—	—	—	—	—	—	—	—
474	530	551	499	546	598	498	472	474	650

The distribution of the disease throughout the year is shown in the following table, from which we perceive that the disease was most prevalent in the fourth quarter.

Table I.

Diphtheria, Memb. Croup, 1913.—Attacks in Weeks, according to date of onset.

First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
Jan. 4	7	April 5	9	July 5	13	Oct. 4	20
,, 11	12	,, 12	10	,, 12	9	,, 11	19
,, 18	10	,, 19	11	,, 19	9	,, 18	24
,, 25	13	,, 26	7	,, 26	6	,, 25	15
Feb. 1	15	May 3	9	Aug. 2	5	Nov. 1	11
,, 8	15	,, 10	6	,, 9	9	,, 8	18
,, 15	9	,, 17	7	,, 16	9	,, 15	16
,, 22	8	,, 24	4	,, 23	6	,, 22	15
March 1	13	,, 31	11	,, 30	9	,, 29	19
,, 8	5	June 7	12	Sept. 6	17	Dec. 6	25
,, 15	15	,, 14	11	,, 13	18	,, 13	19
,, 22	14	,, 21	8	,, 20	9	,, 20	20
,, 29	9	,, 28	11	,, 27	18	,, 27	17
						Jan. 3	14
Total...	145	Total...	116	Total...	137	Total...	252

City total, 650.

Table II.

Shows the Attack Rate per 1,000 living for the year 1913, compared with the mean of five years—Diphtheria and Membranous Croup.

	1908	1909	1910	1911	1912	Mean	1913
*Twelve Notification Towns ...	1·25	1·44	1·20	1·50	1·17	**1·31**	1·43
City of Manchester †.....	0·83	0·98	0·74	0·71	0·71	**0·79**	0·94
Manchester Township.....	0·88	0·89	0·83	0·60	0·51	**0·74**	0·73
North Manchester	0·83	0·98	0·73	0·57	0·66	**0·55**	1·06
South Manchester †.....	0·81	1·03	0·72	0·82	0·79	**0·83**	0·94

* These are in Lancashire and Yorkshire. † Exclusive of Withington.

The following table shows that the attack rate is highest at ages 3 to 4 :—

Table III.

Diphtheria, Memb. Croup, 1913.—Number of Attacks, of Deaths, and Case Fatality at Different Ages, for the Twenty-two Years 1891-1912, and for 1913.

Ages	1891-1912			1913		
	Attacks	Deaths	Case Fatality*	Attacks	Deaths	Case Fatality*
Under one year ...	265	178	67·2	17	8	47·1
1 to 2 years ...	825	442	53·6	41	12	29·3
2 to 3 ,, ...	911	369	40·5	50	12	24·0
3 to 4 ,, ...	1119	377	33·7	71	13	18·3
4 to 5 ,, ...	1103	310	28·1	75	13	17·3
5 to 6 ,, ...	956	246	25·7	82	14	17·1
6 to 7 ,, ...	662	130	19·6	79	11	13·9
7 to 8 ,, ...	531	87	16·4	51	5	9·8
8 to 9 ,, ...	428	71	16·6	37	2	5·4
9 to 10 ,, ...	329	46	14·0	25	1	4·0
10 to 15 ,, ...	930	61	6·6	65	3	4·6
15 to 20 ,, ...	478	25	5·2	25	2	8·0
20 to 25 ,, ...	395	12	3·0	9	...	...
25 to 35 ,, ...	551	18	3·3	14	...	...
35 to 45 ,, ...	216	5	2·3	8	...	...
45 to 55 ,, ...	101	8	7·9	...	...	...
55 to 65 ,, ...				...	...	...
Over 65 ,, ...				1	...	...
All ages	9800	2385	24·3	650	97	14·9

* The percentages in this column are the actual proportions of fatal cases to the attacks at those ages.

The case fatality at all ages since 1901 has been as follows :—

1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
28·8	29·4	21·9	20·7	22·4	21·1	20·4	21·8	17·9	19·9	16·5	20·0	14·9

From the following table we see that the apparent incidence of the disease was greatest in the districts of Blackley, Harpurhey, Beswick, and Moston, whilst it visited, also, severely Ardwick, Openshaw, Bradford, Cheetham, and Rusholme.

TABLE IV.

DIPHTHERIA AND MEMBRANOUS CROUP, 1913.—ATTACKS IN DISTRICTS, WITH ATTACK RATE, CASE FATALITY PER CENT., AND REMOVALS TO HOSPITAL PER CENT.

DISTRICTS		ATTACKS	Deaths	ATTACK RATE PER 1000 LIVING	† CASE FATALITY PER CENT.	REMOVALS TO HOSPITAL PER CENT.
Manchester Township	Ancoats	27	4	0·66	14·8	70·4
	Central	13	3	0·60	23·1	76·9
	St. George's	44	9	0·85	20·4	63·6
North Manchester	Cheetham	41	4	0·92	9·8	70·7
	Crumpsall	9	2	0·85	22·2	66·7
	Blackley	22	6	1·50	27·3	54·5
	Harpurhey	25	3	1·42	12·0	40·0
	Moston	33	4	1·27	12·1	42·4
	Newton Heath	36	9	0·83	25·0	86·1
	Bradford	25	5	0·97	20·0	80·0
	Beswick	17	4	1·38	23·5	88·2
	Clayton	13	1	0·92	7·7	69·2
South Manchester	Ardwick	43	5	1·07	11·6	83·7
	Openshaw	37	6	1·15	16·2	48·6
	Gorton (West)	21	3	0·77	14·3	52·4
	Rusholme & Kirk.	39	3	0·91	7·7	28·2
	Chorlton-on-Med	32	6	0·58	18·7	65·6
	Hulme	55	9	0·86	16·3	56·3
	Moss Side	37	4	1·04	10·8	43·2
	Gorton	62	6	1·37	9·7	41·9
	Levenshulme	19	1	0·86	5·3	21·1
City of Manchester		650	97	0·94	14·9	58·0

† Corrected: the fatal cases are those actually occurring amongst the cases notified.

The figures given below show that in 1913 Manchester had a higher death-rate from Diphtheria than prevailed over England generally.

TABLE V.

DIPHTHERIA, MEMB. CROUP MORTALITY, 1913.—RATE PER 1000 LIVING COMPARED WITH MEAN OF FIVE YEARS.

	1908	1909	1910	1911	1912	Mean	1913
England and Wales	0·15	0·14	0·12	0·13	0·11	0 13	0·12
95 Great Towns	0·16	0·15	0·12	0·15	0·13	0·14	0·13
London	0·15	0·13	0·09	0·14	0·10	0·15	0·09
Manchester City	*0·20	*0·19	‡0·16	0·12	0·13	0·16	0·14
Manchester Township	0·23	0·19	0·18	0·15	0·17	0·18	0·15
North Manchester	0·16	0·15	0·12	0·07	0·12	0·15	0·18
South Manchester	*0·21	*0·21	‡0·18	0·14	0·13	0·17	0·12
146 Smaller Towns	0·16	0·16	0·11	0·12	0·11	0·13	0·11
Rural Districts	0·15	0·14	0·12	0·11	0 10	0·12	0·11

* Exclusive of Moss Side and Withington.
‡ Exclusive of Moss Side, Withington, Gorton, and Levenshulme.

The attack rate, however, was lower than that for the twelve notification towns selected for comparison.

Although the incidence of Diphtheria in Manchester during 1913 was greater than usual, the case fatality rate was, happily, lower than has ever before been recorded. This may be accounted for partly by the number of mild cases in which the diagnosis depended solely upon bacteriological examination of a throat swab, and partly, it is to be hoped, upon the earlier and more frequent use of antitoxin. It has been shown from time to time by various workers that the early administration of antitoxin reduces the mortality to a minimum; the tendency which exists to delay the administration until after the patient has been removed to hospital is therefore to be regretted.

ENTERIC FEVER IN 1913.

The number of cases of Enteric Fever notified in Manchester and accepted in 1913 is 292, an increase on the two previous years. The investigation of these cases was under the charge of Dr. Barbara Cunningham, and was very carefully carried out, so far as time would permit. Table I. shows that the death-rate was not higher than in previous years.

Table I.

Incidence of and Death-rate from Enteric Fever in Manchester.

Number of notified cases, deaths, and death-rates per 1,000 *living from Enteric Fever in each of fifteen successive years.*

Year	1899	1900	1901	1902	1903	1904	1905
No. of cases notified	381	378	359	378	387	325	345
No. of deaths	73	75	75	66	93	66	55
Death-rate — Manchester	0·13	0·14	0·14	0·12	0·17	0·12	0·09
Death-rate — England and Wales..	0·20	0·17	0·16	0·13	0·10	0·09	0·09

Year	1906	1907	1908	1909	1910	1911	1912	1913
No. of cases notified and accepted	384	265	393	369	358	256	242	292
No. of deaths	83	37	75	71	62	46	43	47
Death-rate — Manchester	0·14	0·06	0·11	0·13	0·09	0·07	0·06	0·06
Death-rate — England and Wales..	0·09	0·07	0·07	0·06	0·05	0·07	0·04	0·04

The disease was unequally distributed over the Sanitary Districts, the incidence rate being highest in Openshaw, St. George's, Ancoats, Beswick, Hulme, Chorlton-upon-Medlock, Crumpsall, and Bradford.

Table II.

Enteric Fever, 1913.—Number of Attacks in Districts, with Attack Rate, Case Fatality per cent., and Removals to Hospital per cent.

Districts	Attacks	Attack Rate per 1,000 living	Deaths	† Case Fatality per cent.	Removals to Hospital per cent.	Mean Attack Rate 1903-1912.
Ancoats	28	0·68	5	17·9	78·6	0·73
Central	5	0·23	...	...	60·0	0·48
St. George's	38	0·73	2	5·3	84·2	0·76
Cheetham	17	0·38	2	11·8	88·2	0·34
Crumpsall	5	0·47	1	20·0	80·0	0·62
Blackley	3	0·20	...	...	100·0	0·46
Harpurhey	8	0·45	1	12·5	100·0	0·44
Moston	8	0·31	3	37·5	87·5	0·26
Newton	14	0·32	2	14·3	100·0	0·53
Bradford	12	0·46	3	25·0	58·3	0·72
Beswick	8	0·65	1	12·5	62·5	0·48
Clayton	4	0·28	1	25·0	75·0	0·49
Ardwick	14	0·35	3	21·4	78·6	0·55
Openshaw	30	0·93	5	16·7	90·0	0·70
Gorton (West)	10	0·37	3	30·0	90·0	0·86
Rusholme and Kirkman.	5	0·12	2	40·0	60·0	0·24
Chorlton-upon-Medlock	26	0·47	5	19·2	73·1	0·40
Hulme	30	0·47	6	20·0	83·3	0·66
Moss Side	5	0·14	1	20·0	60·0	...
Gorton	19	0·42	...	...	73·7	...
Levenshulme	3	0·14	1	33·3	33·3	...
City of Manchester	**292**	**0·42**	**47**	**16·1**	**80·5**	**0·54**

† Corrected; the fatal cases are those actually occurring amongst the cases notified.

The distribution of the cases according to the age of attack is given in the following table, which shows that the incidence of the disease rises gradually up to the age-period 15–24, when it reaches a maximum. There are, however, a large number attacked at earlier ages.

Table III.

Enteric Fever.—Number of Attacks, of Deaths, and Case Fatality per cent. at Different Ages, for the Twenty-two Years 1891–1912, and for 1913.

Ages	1891-1912			1913		
	Attacks	Deaths	Case Fatality per cent.	Attacks	Deaths	Case Fatality per cent.
Under one year ...	17	7	41·2	...	...	...
1 to 2 years ...	52	8	15·4	...	...	...
2 to 3 „ ...	108	16	14·8	1	...	...
3 to 4 „ ...	153	21	13·7	2	...	...
4 to 5 „ ...	207	22	10·6	5	1	...
5 to 6 „ ...	241	27	11·2	3	...	...
6 to 7 „ ...	238	24	10·1	2	...	...
7 to 8 „ ...	221	20	9·1	5	...	...
8 to 9 „ ...	240	20	8·3	2	1	...
9 to 10 „ ...	227	22	9·7	4	1	...
10 to 15 „ ...	1329	148	11·1	33	1	...
15 to 20 „ ...	1446	265	18·3	30	3	...
20 to 25 „ ...	1410	279	19·8	46	7	...
25 to 35 „ ...	1980	469	23·7	83	16	...
35 to 45 „ ...	936	283	30·3	39	6	...
45 to 55 „ ...	616	216	35·1	23	6	...
55 to 65 „ ...				13	4	...
Over 65 „ ...				1	1	...
All ages	**9421**	**1847**	**19·6**	**292**	**47**	**16·1**

Table IV. shows the distribution of the attacks in weeks. It shows that the attacks drop suddenly in the second week in June, and remain low up to the week ending August 16th.

Table IV.

Enteric Fever Attacks in weeks Reported in 1913, According to date of Onset.

First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
Jan. 4	9	Apl. 5	12	July 5	1	Oct. 4	5
,, 11	10	,, 12	7	,, 12	1	,, 11	8
,, 18	10	,, 19	7	,, 19	1	,, 18	8
,, 25	4	,, 26	8	,, 26	1	,, 25	11
Feb. 1	6	May 3	1	Aug. 2	...	Nov. 1	9
,, 8	1	,, 10	7	,, 9	1	,, 8	2
,, 15	3	,, 17	7	,, 16	4	,, 15	6
,, 22	4	,, 24	5	,, 23	3	,, 22	6
Mch. 1	6	,, 31	9	,, 30	5	,, 29	6
,, 8	4	June 7	9	Sept. 6	8	Dec. 6	5
,, 15	6	,, 14	3	,, 13	7	,, 13	9
,, 22	9	,, 21	2	,, 20	6	,, 20	3
,, 29	9	,, 28	1	,, 27	10	,, 27	4
						Jan. 3	3
Total...	81	Total...	78	Total...	48	Total...	85

City Total 292

From the following figures it will be seen that the incidence in 1913 was above that prevailing in the comparison towns.

The next table shows that the attack-rate has fallen more in the twelve notification towns than it has done in Manchester.

Table V.

Enteric Fever Attacks, 1913.—Rates per 1,000 living, Compared with Mean of Five Years.

	1908	1909	1910	1911	1912	Mean	1913
Twelve Notification Towns ..	0·56	0·42	0·33	0·47	0·30	**0·42**	0·24
City of Manchester *	0·60	0·61	0·53	0·38	0·36	**0·50**	0·42
Manchester Township	0·79	0·90	0·84	0·59	0·32	**0·69**	0·62
North Manchester.....	0·44	0·47	0·39	0·31	0·28	**0·38**	0·38
South Manchester*	0·61	0·58	0·51	0·36	0·42	**0·50**	0·39

* Excluding Withington.

From the next table we see that Manchester has not kept pace with the country generally in the reduction of Enteric Fever.

Table VI.

Enteric Fever Mortality, 1913. Rate per 1,000 living, Compared with Mean of Five Years.

	1908	1909	1910	1911	1912	Mean	1913
England and Wales	0·07	0·06	0·05	0·07	0·04	**0·06**	0·04
London	0·05	0·03	0·04	0·03	0·03	**0·04**	0·02
Dublin	0·14	0·17	0·10	0·20	0·11	**0·14**	0·09
City of Manchester	†0·12	†0·15	‡0·09	0·07	0·06	**0·10**	0·06
Manchester Township	0·15	0·22	0·14	0·15	0·04	**0·14**	0·05
North Manchester	0·07	0·11	0·05	0·05	0·08	**0·07**	0·06
South Manchester	†0·13	†0·14	‡0·09	0·06	0·06	**0·10**	0·07

† Exclusive of Moss Side and Withington.
‡ Exclusive of Moss Side, Withington, Gorton, and Levenshulme.

When the individual case papers are analysed, we find that the number of cases traced to previous attacks is unusually small.

The number on the other hand found associated with the previous consumption of mussels is unusually large. It may at once be admitted that proof of the connection between individual attacks and the previous consumption of mussels cannot be adduced. On the other hand, there is no sort of relationship between an outbreak of Enteric Fever from the consumption of drinking water or milk, and the occurrence of Enteric Fever as the result of consuming mussels.

Infection of mussels when it does occur is spread over a great bulk of water, and is probably conveyed in flakes of mucus. The contaminated and uncontaminated mussels are mixed when put into bags, when taken out of the bags, and afterwards.

Hence we could not look for an outburst of disease. At the most we should look for irregular occurrences of fever occurring in rushes amongst the customers of particular dealers, or perhaps in particular localities.

If we found that more than one person consuming mussels at one place and time contracted Enteric Fever. that would be strong evidence. This occurs, however, only once in 1913, although in 6 instances other persons consuming mussels at the same time as the person who subsequently developed Enteric Fever were taken ill.

Examination of mussels made during the year by Professor Delépine in two instances showed that these were highly contaminated.

When the cases are investigated according to their histories a large number must be rejected, because the histories are too indefinite as regards date to allow of their being regarded as infected by mussels, or to allow of their being included in a list of cases which might have been so infected. Still, there remain 93 cases in which mussels were consumed at a period before the attack compatible with infection. In a considerable number of other cases there is evidence of consumption of mussels.

But in these either there is no history connecting the two events, or the dates do not accord. Too much stress need not be laid on this, as it is known that men are liable, on leaving the public-house intoxicated, to consume mussels without recollecting the circumstance, and it is only by a chance that the fact comes out.

These cases, then, are rejected, and in a comparison are entered among non-mussel cases, which unduly weights the comparison against a possible mussel history. Six persons also were infected from persons possibly infected primarily by mussels.

It is, however, necessary to make this division in order to bring out sharply the facts relating to cases associated with the consumption of mussels in such a manner as to permit of their having been infected from this source.

Classifying first what we may call "mussel cases," and "other cases," according to sex and age-periods, we get the following table :—

	Males at Ages							Females at Ages							Total
	0-4	5-14	15-24	25-44	45-64	65+	0-4	5-14	15-24	25-44	45-64	65+		
Mussel Cases ..	..	7	25	33	6	..	..	3	4	13	2	..	93	286
Other Cases ..	2	21	29	43	13	..	4	20	15	32	14	..	193	

The discrepancy between this number and the 292 already given cannot be easily bridged over, depending as it does on uncertainty of diagnosis. But the differences in distribution are clearly marked.

The number of males brought into association with the previous consumption of mussels is 71, as against 22 females. With regard to these 93 cases it should be stated also that there is no evidence pointing to direct infection from person to person, although in a number of cases other possibly contaminated foods have been consumed. Previous inquiries, however, appear to establish that little importance can be attached to the possible contamination of other foods. It must be admitted that the absence of histories of direct infection in these cases is in itself a striking fact.

The great preponderance of males among "mussel" cases is noteworthy. Amongst other cases the numbers are:—Males, 108; females, 85; and of these there are many in whom clearer information might have established a mussel history.

This arrangement of the facts, however, need not by itself mean anything more than this, that a very large amount of mussels is consumed amongst the persons who contract Enteric Fever, and that, amongst these, the number of males consuming mussels immensely preponderates over the number of females.

It is very improbable, however, that the consumption of mussels, large as it is, is such as would lead us to expect that a third of the cases of Enteric Fever would be found in close association with the previous consumption of mussels. It is also very improbable that the disproportion between the number of males and females consuming mussels is anything like so great as the disproportion between male and female cases of Enteric Fever associated with the previous consumption of mussels.

There are differences, however, in the modes of consumption. Amongst both males and females there is reason to think that steamed mussels are more largely used than raw mussels; but men not infrequently have raw mussels, whilst these shellfish are much less frequently taken by women in the raw state.

The histories obtained show that mussels are often consumed by men after they have been drinking heavily of beer, and one has suspected that this heavy drinking has assisted in bringing on an attack. Now the steaming of mussels may or may not destroy any infection in the mussel. It does not necessarily do so. But it does, no doubt, in the aggregate render the mussels so treated less dangerous as sources of infection, assuming them to be in an infective condition to start with. These differences, then, in the modes of consumption of men and women might account for the great difference of mussel cases in males and females if mussels were a source of Enteric Fever.

It appears desirable that the facts should be analysed further, and, accordingly, in the 93 mussel cases the cases have been classified according to the condition of the mussels—that is, whether raw, steamed, cooked, or not ascertained—and also as to the sex of the consumers.

Mussel Cases.

	MUSSELS			CASES	
	Taken alone	With others	Not stated	Male	Female
Raw	21	19	12	40	12
Steamed	8	17	12	27	10
Cooked	2	1	..	3	..
Not stated	..	1	..	1	..
Total	31	38	24	71	22

This table shows that the majority of the mussel cases have partaken of raw mussels. The preponderance is less in the case of females than in the case of males.

It should be stated that when both raw and steamed mussels have been taken at the suspected period of infection, the cases are entered as having consumed raw mussels.

When the mussel and non-mussel cases are plotted out on sheets, showing for each Sanitary District the numbers occurring month by month, it is found that the 147 non-mussel cases show only two groups in one month of as many as 5 cases, viz. : one of 11 in January in Chorlton-upon-Medlock, due to infection in the Royal Infirmary ; and one of 5 in August in Cheetham.

Amongst the 93 mussel cases there are 4 instances in which the monthly incidence of mussel cases reaches 5, viz., 2 in St. George's and 2 in Hulme. Six cases occur in St. George's in September, and 5 in October. It may be observed that only 5 mussel cases occur in this district during the rest of the year.

Similarly, Hulme has two incidences of 5 each in January and April, while only 4 mussel cases occur during the whole of the rest of the year.

It is found very difficult to ascertain the origin of mussels believed to have been purchased at a particular shop on a given date.

The following are the numbers ascertained to have come from certain large dealers :—

A	.. .. ..	15
B	.. .. ..	15
C	.. .. ..	8
D	.. .. ..	2
E	.. .. ..	4
F	.. .. ..	3

To conclude, the evidence pointing to the connection of mussels with Enteric Fever is indirect. The number of cases found associated with the consumption of mussels is too high. The cases so associated do not carry with them histories of exposure to known sources of infection. Samples of mussels still show a high content of bacillus coli. There is, at all events, some evidence pointing to particular layings.

The "mussel" Enteric cases do to a certain extent occur in little rushes.

The number of such cases is specially large in the custom of two dealers, though, for aught I know, this may be due to the relatively large amount of business which they do. There is also some source of infection tending to maintain Enteric Fever above the level to which it is sinking elsewhere. Admitting, as I have always done, that ordinary clear proof is wanting, the facts do in my judgment indicate mussels as, at all events, one of the sources of Enteric Fever in Manchester.

It may be further said on this subject that the District Inspector's inquiry will often fail to elicit the facts as regards consumption of mussels, and I therefore place no importance on the comparison between what is ascertained in one district and in another.

The Manchester Carrier Case.

In 1907 the first mention is made of the carrier case Mrs. W, and in that year it was found that she had probably given rise to at least 5 other cases. Dr. J. R. Hutchinson investigated the case further, and gives the following account in the Annual Report for 1908, from which it will be seen that a history of 7 contacts with this carrier, all apparently lodgers with the carrier case, had then occurred, and that her "carrier" condition probably dated so far back as 1898 :—

Statement by Dr. J. R. Hutchinson.

One Typhoid carrier case was found during the year 1908, whilst it was also found that a second patient, who had the disease in September, 1908, was excreting the bacilli 5 months later. This case will be further investigated. The first case is recorded as possessing points of interest on page 107 of the Medical Officer of Health's Annual Report for 1907 (Case 130). Since that time further details have been brought to light. Briefly, the history of the cases is as follows :—

Case 229, 1908. J. H. W., æt. 36. Commenced with Enteric Fever about September 24th, 1908. The blood test was positive on October 19th, 1908. He had been living at the house in which he then was 4 days. Prior to this he had lodged for some months at the house of a Mrs. W. Mrs. W. is a widow who gets her living by taking in lodgers; she does all her own housework, and commonly has 2 or 3 lodgers. At the same house in which J. H. W. was presumably infected, 3 previous cases had occurred amongst Mrs. W.'s lodgers.

Case 130, 1907. J. W. E., æt. 19. Commenced with Enteric Fever on September 7th. He was removed to Monsall on the 28th of that month; his blood gave a positive reaction.

Case 244, 1906. A. A., æt. 28. Commenced with Enteric Fever on September 4th; blood test positive; death occurred October 16th, 1906.

Case 135, 1906. A. W., æt. 28. Commenced with Enteric Fever on May 2nd; blood test positive; death took place on June 14th, 1906.

Three further cases of Enteric Fever were traced to 2 other houses at which Mrs. W. had previously taken in lodgers.

Case 174, 1905. H. R., æt. 19. Onset of disease, May 20th; blood test positive. There is a chance that this case was infected outside Manchester.

Case 118, 1905. H. P., æt. 25. Onset of disease, April 8th, 1905; blood test positive.

A daughter of H. P.'s, too, had a suspicious illness about this time, but a blood specimen could not be obtained.

Case 388, 1898. W. D., æt. 23. Onset, October 4th. Removed to Monsall, and died November 1st, 1898. The only factor common to all these cases is the presence of Mrs. W.

No history of contact with known Enteric Fever cases, or of consumption of shellfish, was obtainable in any of the series.

Mrs. W.'s medical history is as follows:—Up to about 1893, when she was about 54 years of age, she enjoyed good health, and never had occasion to see a medical man. In this year she had an attack of Influenza and Pneumonia, for which she was treated in a Union Hospital. She remembers little about this illness, except that she had headaches and pains in the back, and was delirious. She was ill for about 5 weeks, and was kept on fluid foods. Since this illness she has suffered from periodical attacks of abdominal pain and vomiting.

These attacks did not follow immediately on the illness of 1893; there was an interval of about 5 years, during which her health was good (*vide* Inspector Hewitt's report on 130, 1907).

Since 1898, however, she has had many attacks of abdominal pain at intervals of a few days (3 to 7). During an attack, which lasts from a few to 24 hours, the patient's feet are cold, the urine is like blood, there is much abdominal pain, which is relieved by vomiting.

A sample of blood obtained in November, 1907, gave a negative reaction.

Five of these cases are recorded in the Annual Report of the Medical Officer of Health for 1907.

The occurrence of a sixth case in October, 1908, caused further search to be made, when a seventh was discovered so far back as 1898.

No cases can be found as having occurred in the vicinity of Mrs. W. prior to 1898. Possibly some have been overlooked. It was not till 1898 that Mrs. W. began to suffer from abdominal pain, etc., after her 5 years of good health. The year she began to be ill was marked by the appearance of the first known case of Enteric Fever amongst her lodgers.

It is curious that no further cases should come to light between 1898 and 1905. It is a well-known fact that in " carrier " cases the bacilli are excreted in the stools and urine in batches, with bacillus-free intervals. Many such batches must have been shed from time to time during these years. At the request of the Medical Officer of Health, Mrs. W. was examined in October, 1908, by the practitioner who usually attended her. He was unable to find any abnormal physical signs—the liver was not enlarged, the gall bladder could not be felt, there was no evidence of gall stones, and no symptoms to suggest their presence. He had had the patient under treatment on and off for " years " for " Indigestion " and " Chronic Constipation." So far as he knew she had never been jaundiced.

On November 4th, 1908, Mrs. W.'s blood gave a positive reaction in 30 minutes.

On the evening of November 4th she was given, at Professor Delépine's suggestion, a dose of sulphate of soda, and next morning specimens of her fæces and urine were obtained. Both specimens were found to contain Typhoid bacilli.

A month later (December 3rd) further specimens were obtained without the administration of a cathartic. On this occasion Professor Delépine found Typhoid bacilli in the fæces only; the urine was sterile.

Attempts to get another specimen of blood from this patient were unsuccessful. Further examples of the excretions will, however, be examined.

It seems highly probable that the Influenza and Pneumonia from which Mrs. W. suffered in 1893 was in reality Enteric Fever. It is certainly remarkable that she is not known to have infected anyone prior to 1898, especially so as she was engaged in general housework, including the preparation of food, etc., for her lodgers. Certainly her attacks of abdominal pain, etc., do not seem to have troubled her before 1898.

She cannot, when her serum gave a positive reaction in November, 1908, have been infected by J. H. W., the last case to occur in her house, as not only did her excretions contain Typhoid bacilli at the time, but they were present in her fæces on December 3rd, six weeks after J. H. W. had been removed to hospital. The negative blood reaction obtained in November, 1907, is not of great importance, for, as Doerr showed in 1905, the persistence of Typhoid bacilli in the bile is unable to preserve the agglutinating properties of the blood serum.

Supposing Mrs. W. to be a carrier, why should her blood give a positive reaction in November, 1908, and not in November, 1907 ?

It has been pointed out by some German observers that this not infrequently occurs. Forster and Kayser suggest that the attacks of abdominal pain, vomiting, etc., which occur from time to time, are due to local inflammatory changes in the gall bladder, set up by the contained bacilli, and that with each attack more agglutinating substances develop in the blood stream. Widal's reaction, then, would probably be obtained with a blood specimen taken soon after one of the periodic attacks of abdominal pain, etc., but with the lapse of time, and without the assistance of another attack, the serum loses its agglutinating properties. Mrs. W. has had "stomach aches" at intervals of "a few days" for upwards of 10 years.

Explicit directions have been given to Mrs. W. as to the treatment of her excretions, and the necessity of thoroughly disinfecting her hands frequently. The great importance of this latter measure, especially in relation to the preparation of food, has been impressed upon her.

Case 268 in the year 1910 was a servant of this carrier case, and, no doubt, was infected by her.

No case was infected by her in 1911, but in 1912 she infected a male lodger. She was admitted to Monsall hospital, and treated with a vaccine prepared at the Public Health Laboratory. At Dr. Cunningham's suggestion, the Sanitary Committee decided to make her a weekly allowance sufficient to keep her when added to her old age pension on condition that she did not take in lodgers. In this year she was found to be excreting large numbers of Typhoid bacilli.

In the present year Mrs. W., who was now 75 years of age, became very ill and wasted, and suffered much from Diarrhœa. She was therefore sent into Monsall Hospital, where she died after a stay of nine days on 26th May, 1914.

A post-mortem examination was made by the Medical Superintendent, who found that the immediate cause of death was Carcinoma of the cardiac end of the stomach and of the pancreas. The gall bladder contained calculi, and Dr. Fletcher found abundant Typhoid bacilli in it, but recovered none from the spleen. Materials were sent to Professor Delépine.

The history is very like that of the woman whom we suspected to be a carrier, and to have infected a number of cases in the old St. Mary's Hospital in the year 1897. She was known to be suffering from Cancer of the Stomach. The spleen was sent to Professor Delépine, but no Typhoid bacilli were recovered. A very strong suspicion remained, however, that this patient had been the origin of the cases.

Bacteriological Examinations made for the County Borough of Manchester during the Year 1913, Public Health Laboratory, University of Manchester.

Month	Diphtheria			Typhoid			Tuberculosis						Other Investigations
							Sputum			Milk			
	+	—	Total	+	—	Total	+	—	Total	+	—	Total	
January.. ..	18	74	92	35	84	119	105	230	335	10	53	63	L.B. 5,734, cerebro spinal fluid; 5,757, urine fæces (2); 5,762, swab from discharge nose; 5,763, cerebro spinal fluid; 5,770, sputum; 5,728, urine
February ..	20	106	126	24	70	94	150	323	473	5	46	51	L.B. 5,799, sputum; 5818, urine; Sch B 134-136, hair (3);
March	25	132	157	14	81	95	105	349	454	8	61	69	Sch. B. 138, hair
April	15	106	121	30	35	65	85	234	319	11	42	53	L.B. 5,907, portion of stomach wall and liver (2)
May	21	95	116	26	61	87	99	225	324	9	45	54	Sch. B. 151, 152, hair (2); L.B. 5 925, urine and fæces (2); 5,965, urine and fæces (2); 5,966-7, fæces and organs (10); 5,981, diphtheria cultures (2); 5 985, culture from nose swab; 5.932, W.B. 1,106, water; 5,948-9, blood (2); 5,951, fæces, urine (4)
June	20	96	116	16	49	65	88	198	286	6	45	51	L.B. 5,989, hair
July	26	98	124	6	29	35	88	156	244	11	51	62	L.B. 6,065, cerebro spinal fluid
August	26	118	144	7	37	44	88	185	273	12	68	80	Sch. B. 185, hair; L B. 6,155, cultures of dip. bacillus (2)
September ..	18	102	120	16	36	52	78	176	254	9	35	44	L.B. 6,221, sputum
October.. ..	44	148	192	20	43	63	80	201	281	12	53	65	L.B. 6,293 6,298, 6,303, cerebro spinal fluid; 6 229, blood (6)
November ..	51	185	236	32	71	103	101	215	316	14	71	85	L B. 6,310, mussels (2); 6 361, sputum; 6,336, C.B. 1,465-6, vomit and fæces (4); L.B. 6,344, C.B. 1,470-1, urine and fæces (4 ; L B. 6,335; C.B. 1,459-64, jam, water (6), flour, tea, sugar, oatmeal
December ..	31	138	169	16	38	54	86	169	255	6	45	51	L.B. 6.337, vomit and fæces (2); 6,338; C.B. 1,467, lump sugar; L.B. 6,345; C.B. 1,472-3, urine fæces (4); L.B. 6,346; C.B. 1,474-5, urine fæces (4)
Total ..	315	1,398	1,713	242	634	876	1,153	2,661	3,814	113	615	728	84

MEASLES.

Table 1.

A comparison of the mortality due to Measles with that caused by other zymotic diseases, and by Phthisis, is given in the following figures. It will be seen that the mortality of 1913 was comparatively low:—

No. of Deaths from	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902
Measles	293	222	505	567	628	271	699	254	292	242
Scarlet Fever	140	116	173	198	124	65	46	105	127	146
Diphtheria	122	102	72	54	29	41	71	76	133	123
Enteric Fever	127	91	95	118	95	120	73	75	75	66
Smallpox	49	21	2	0	0	0	0	0	0	0
Whooping Cough	240	286	250	359	299	170	227	371	224	242
Diarrhœa, &c.	956	375	904	572	964	1090	1121	822	1019	296
Phthisis	1060	1026	1139	1078	1139	1056	1117	1135	1144	1145

No. of Deaths	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Measles	345	425	231	475	229	366	396	291	337	490	259
Scarlet Fever	97	85	78	108	102	92	164	74	45	51	94
Diphtheria	136	99	127	119	106	123	113	101	88	97	105
Enteric Fever	93	66	55	83	37	75	88	61	51	47	48
Smallpox	24	9	0	0	0	0	0	0	0	1	0
Whooping Cough	213	280	195	193	314	220	129	397	140	298	139
Diarrhœa, &c.	507	761	729	981	291	591	261	351	1149	272	622
Phthisis	1025	1106	988	1089	1092	1088	1115	1070	1116	1107	1056

Table 2 shows the distribution of deaths in ages. The highest intensity of fatality is in the second half of the first year, and in the second year:—

Table 2.

Deaths from Measles in the City of Manchester.

Years	Under One Year			Years of Age				Total 5 Years and upwards
	Under 3 Months	3-5 Months	6-11 Months	-1	-2	-3	-4	
1899–1908	16	57	742	1470	599	338	168	168
1909	2	6	78	164	58	37	16	35
1910	2	2	76	118	39	21	15	18
1911	1	7	73	152	47	30	16	11
1912	4	8	99	163	88	58	38	32
1913	5	3	62	98	37	20	19	15

Table 3 shows the distribution of deaths from Measles in quarters of the year:—

TABLE 3.

YEAR	1st Quarter	2nd	3rd	4th
1902	67	68	60	47
1903	158	104	54	29
1904	100	189	83	53
1905	41	99	77	13
1906	60	266	118	32
1907	51	73	50	55
1908	116	78	71	101
1909	155	164	45	32
1910	32	118	71	70
1911	48	197	61	31
1912	214	211	28	37
1913	85	105	58	11

The following table shows that the death-rate from Measles in 1913 was nearly the same as that prevailing throughout the country and the other great towns.

TABLE 4.—1913.—MEASLES MORTALITY.—RATE PER 1000 LIVING, COMPARED WITH MEAN OF FIVE YEARS.

	1908	1909	1910	1911	1912	Mean	1913
England and Wales	0·22	0·35	0·23	0·36	0·35	**0·30**	0·28
95 Great Towns	0·31	0·48	0·31	0·47	0·47	**0·41**	0·34
London	0·31	0·48	0·41	0·57	0·40	**0·43**	0·34
City of Manchester	0·60†	0·67	0·40‡	0·47	0·68	**0·56**	0·35
Manchester Township	0·70	0·93	0·62	1·05	0·85	**0·83**	0·61
North Manchester	0·54	0·46	0·32	0·46	0·59	**0·47**	0·27
South Manchester	0·59†	0·72	0·49‡	0·31	0·67	**0·56**	0·32
146 Smaller Towns	0·20	0·33	0·16	0·41	0·35	**0·29**	0·30
Rural Districts	0·13	0·21	0·15	0·22	0·20	**0·18**	0·20

† Exclusive of Moss Side and Withington. ‡ Exclusive of Moss Side, Gorton, Withington, and Levenshulme.

The manner in which the disease was distributed is shown in the following table, which shows that the severest incidence of mortality was on these districts: St. George's, West Gorton, and Bradford:—

TABLE 5.—1913.—DEATHS AND DEATH-RATES FROM MEASLES IN THE VARIOUS DIVISIONS OF THE CITY.

Statistical Divisions		Estimated Population	Deaths	Death-rate	Average Death-rate 1903-1912
City of Manchester		731,556	259	0·35	0·56
I. Manchester Township ...		112,599	70	0·61	0·83
II. North Manchester.....		205,321	56	0·27	0·45
III. South Manchester.....		413,636	133	0·32	0·52
I.	Ancoats	40,259	12	0·29	0·97
	Central	21,409	6	0·28	0·71
	St. George's	50,931	52	1·01	0·77
II.	Cheetham	43,640	6	0·14	0·24
	Crumpsall	10,463	2	0·19	0·42
	Blackley.....	14,421	...	...	0·36
	Harpurhey	17,379	2	0·11	0·53
	Moston	25,487	4	0·15	0·33
	Newton Heath	42,447	12	0·28	0·51
	Bradford	25,460	22	0·85	0·73
	Beswick	12,130	5	0·41	0·79
	Clayton	13,894	3	0·21	0·31
III.	Ardwick	39,745	16	0·40	0·57
	Openshaw	31,674	16	0·50	0·72
	Gorton (West)	26,958	25	0·91	0·61
	Rusholme and Kirk.....	42,393	2	0·05	0·26
	Chorlton-upon-Medlock..	54,504	12	0·22	0·44
	Hulme	63,065	27	0·42	0·92
	Moss Side	35,119	7	0·20	0·12
	Withington	53,869	5	0·09	0·10
	Gorton	44,555	21	0·46	...
	Levenshulme.....	21,754	2	0·09	...

WHOOPING COUGH.

The distribution of the death-rates from this disease is seen in the following tables. The highest death-rates are in Ardwick, West Gorton, Harpurhey, Moston, and Newton. The death-rate for 1913 was above that of the country generally, of the great towns, and of London, although the lowest yet reached in Manchester.

Table 6.

1913.—Whooping Cough Mortality.—Rate per 1000 living, compared with mean of five years.

	1908	1909	1910	1911	1912	Mean	1913
England and Wales	0·27	0·20	0·24	0·21	0·23	**0·23**	0·14
95 Great Towns.....	0·29	0·24	0·29	0·24	0·26	**0·26**	0·17
London	0·20	0·26	0·28	0·23	0·22	**0·24**	0·17
City of Manchester ...	0·35†	0·21	0·61‡	0·20	0·41	**0·36**	0·19
Manchester Township ...	0·31	0·15	0·88	0·33	0·55	**0·44**	0·19
North Manchester.....	0·26	0·15	0·47	0·18	0·36	**0·28**	0·19
South Manchester	0·43†	0·28	0·59‡	0·16	0·40	**0·37**	0·18
146 Smaller Towns	0·25	0·17	0·24	0·18	0·24	**0·22**	0·13
Rural Districts	0·25	0·16	0·17	0·19	0·17	**0·19**	0·12

† Exclusive of Moss Side and Withington.

‡ Exclusive of Moss Side, Withington, Gortor, and Levenshulme.

The following table shows the death-rates for each of the Sanitary Divisions and Districts. It will be seen that Ardwick and West Gorton have the highest death-rates, but that the mortality is widely distributed.

TABLE 7.—1913.—DEATHS AND DEATH-RATES FROM WHOOPING COUGH IN THE VARIOUS DIVISIONS OF THE CITY.

Statistical Divisions		Estimated Population	Deaths	Death-rates	Average Death-rates, 1903-1912.
City of Manchester		**731,556**	**139**	**0·19**	**0·37**
I.	Manchester Township	112,599	22	0·19	0·43
II.	North Manchester	205,321	40	0·19	0·32
III.	South Manchester	413,636	77	0·18	0·38
I.	Ancoats	40,259	10	0·24	0·48
	Central	21,409	1	0·05	0·37
	St. George's	50,931	11	0·21	0·43
II.	Cheetham	43,640	5	0·11	0·19
	Crumpsall	10,463	...	...	0·24
	Blackley	14,421	2	0·14	0·18
	Harpurhey	17,379	5	0·28	0 32
	Moston	25,487	7	0·27	0·27
	Newton Heath	42,447	11	0·26	0·45
	Bradford	25,460	6	0·23	0·47
	Beswick	12,130	2	0·16	0·25
	Clayton	13,894	2	0·14	0·32
III.	Ardwick	39,745	20	0·50	0·47
	Openshaw	31,674	5	0·16	0·51
	Gorton (West)	26,958	9	0·33	0·47
	Rusholme and Kirk.	42,393	3	0·07	0·24
	Chorlton-upon-Medlock	54,504	10	0·18	0·33
	Hulme	63,065	15	0·23	0·52
	Moss Side	35,119	...	...	0·18
	Withington	53,869	4	0·07	0·13
	Gorton	44,555	6	0·13	...
	Levenshulme	21,754	5	0·23	...

SUMMER DIARRHŒA.

The mortality from this disease was again high in 1913, and it must be admitted that this should be regarded as a reproach to our administration. The number of deaths in the last quarter of the year will be seen from Table 2 to have been the highest for 10 years.

In spite of strenuous efforts to amend the conditions under which horse manure is stored and removed, actual inspection showed that they could not have been fulfilled in the sense of the bye-laws.

The bye-laws should be amended so as to make evasion impossible. Otherwise much good work has been done in the improvement of stables and storage of manure under Mr. Brittlebank's direction. It will also be a long task to secure the requisite conditions of care and cleanliness in many of the households.

It is very desirable that an effort should be made to improve the methods of treating this condition, the more so that excellent results in the home may be secured by the nurses assisting in carrying out the best methods of treatment.

The following tables set forth the facts for the year :—

TABLE I.—1913.—DIARRHŒA AND SIMPLE CHOLERA MORTALITY.—RATE PER 1,000 LIVING, COMPARED WITH MEAN OF FIVE YEARS.

This table of comparison shows that the Diarrhœa rate in 1913 was not much above that of the 95 great towns.

	1908	1909	1910	1911*	1912*	Mean	Deaths under 2 years per 1,000 births. 1913
England and Wales	0·50	0·28	0·29	1·06	8·53	**2·13**	23·41
95 Great Towns	0·65	0·38	0·38	1·31	10·91	**2·73**	29·33
London	0·53	0·33	0·28	1·18	12·42	**2·95**	27·50
City of Manchester.....	0·90	0·41	0·49	1·60	0·38	**0·76**	30·76
Manchester Township	1·58	0·82	0·94	3·03	0·84	**1·44**	55·43
North Manchester.....	0·67	0·35	0·38	1·45	0·31	**0·63**	27·22
South Manchester	0·77	0·30	0·41	1·27	0·28	**0·61**	24·08
146 Smaller Towns	0·52	0·27	0·26	1·14	8·01	**2·04**	24·73
Rural Districts	0·33	0·17	0·20	0·77	5·52	**1·40**	14·39

* The death-rates, other than for Manchester, are for children under two years of age per 1,000 births. The rate for children under two years in Manchester for 1912 was 14·18.

The number of deaths in successive years, and their distribution in quarters of the year, are exhibited in the following figures:—

TABLE 2.—DIARRHŒA AND SIMPLE CHOLERA DEATHS IN QUARTERS, 1903–1913.

	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	Mean	1913
First Quarter.....	48	34	23	32	14	29	19	30	44	49	**32**	60
Second Quarter...	49	38	31	37	18	29	35	29	50	40	**36**	46
Third Quarter.....	303	626	615	780	72	423	171	236	958	102	**429**	351
Fourth Quarter...	107	63	60	132	187	110	43	56	97	81	**94**	165
	507	761	729	981	291	591	268	351	1149	272	**591**	622

From Table 2 it will be seen that the seasonal prevalence of Diarrhœa extended into the fourth quarter.

The meteorological data given in the following table show that the third quarter was warm and humid:—

TABLE 3.

Third Quarter of the years	Mean Temperature	Rainfall, Inches	Humidity, per cent.	Diarrhœa and Simple Cholera Mortality. Annual Rate (third quarter) per 1,000 living
1891	58°·2	12·8	79 %	1·57
1892	57°·0	12·5	78 %	2·07
1893	60°·4	10·7	74 %	4·95
1894	57°·8	9·0	78 %	1·55
1895	60°·4	11·2	77 %	4·17
1896	58°·5	9·7	76 %	2·93
1897	58°·9	9·7	73 %	6·01
1898	60°·1	6·1	74 %	6·00
1899	60°·8	7·7	75 %	6·96
1900	60°·3	9·6	78 %	4·14
1901	61°·9	6·5	74 %	6·33
1902	57°·6	5·9	78 %	0·88
1903	57°·8	12·3	77 %	2·19
1904	60°·2	6·9	73 %	4·48
1905	58°·9	9·4	76 %	3·89
1906	60°·8	6·2	75 %	4·91
1907	58°·5	7·8	77 %	0·45
1908	59°·2	10·7	78 %	2·61
1909	57°·8	10·4	79 %	1·04
1910	58°·1	9·1	79 %	1·32
1911	63°·0	6·7	69 %	5·48
1912	56°·9	12·3	79 %	0·56
Mean	**59°·3**	**9·2**	**76 %**	**3·38**
1913	59°·4	4·9	80 %	1·89

The distribution of the disease, in weeks, is shown in the following table:—

1913—TABLE 4.

DEATHS FROM DIARRHŒAL DISEASES IN MANCHESTER IN THE WEEKS ENDING ON THE DATES GIVEN BELOW.

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER		FOURTH QUARTER	
Jan. 4	3	April 5	2	July 5	4	Oct. 4	33
,, 11	4	,, 12	2	,, 12	7	,, 11	29
,, 18	6	,, 19	3	,, 19	8	,, 18	16
,, 25	4	,, 26	4	,, 26	6	,, 25	11
Feb. 1	8	May 3	5	Aug. 2	19	Nov. 1	14
,, 8	4	,, 10	2	,, 9	24	,, 8	16
,, 15	8	,, 17	3	,, 16	42	,, 15	7
,, 22	3	,, 24	9	,, 23	40	,, 22	10
Mar. 1	3	,, 31	2	,, 30	37	,, 29	6
,, 8	8	June 7	4	Sept. 6	32	Dec. 6	6
,, 15	3	,, 14	5	,, 13	48	,, 13	4
,, 22	4	,, 21	2	,, 20	44	,, 20	7
,, 29	2	,, 28	3	,, 27	40	,, 27	3
						Jan. 3	3
Total...	60	Total...	46	Total ...	351	Total ...	165

City Total 622

The distribution of the death-rates and mortality-rate from Diarrhœa in districts is given in the following table. The districts which suffered most were St. George's, Central, Bradford, Ancoats, and Ardwick, though a comparatively high mortality-rate was also experienced in Newton, Hulme, Clayton, Chorlton-upon-Medlock, and Gorton.

TABLE 5.—1913.—DEATHS AND DEATH-RATES FROM DIARRHŒAL DISEASES IN THE VARIOUS DIVISIONS OF THE CITY, WITH DEATH-RATES UNDER ONE YEAR PER 1,000 BIRTHS FOR 1913, AND AVERAGE FOR PREVIOUS 10 YEARS.

	1913			Death-rates under one year per 1,000 Births											
	Estimated Population	Total Deaths	Death-rates	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	Average 10 years 1903 to 1912	1913
City of Manchester ..	**731,556**	**622**	**0·84**	**22·1**	**34·1**	**30·8**	**39·8**	**12·2**	**24·0**	**11·1**	**12·6**	**45·0**	**11·0**	**24·3**	**22·7**
I. Manchester Township.	112,599	202	1·77	31·3	40·9	47·7	58·5	18·0	37·8	18·9	20·7	68·2	20·1	36·2	38·4
II. Northern Districts ...	205,321	156	0·75	15·0	30·1	31·3	30·8	10·3	17·8	9·9	10·2	41·3	9·2	20·6	19·4
III. Southern Districts....	413,636	264	0·63	22·0	33·0	22·5	36·7	10·7	21·5	8·3	11·0	38·5	8·6	21·3	19·0
I. Ancoats	40,259	73	1·79	30·2	35·4	50·9	54·9	21·0	40·8	17·9	15·6	76·4	22·2	36·5	33·9
I. Central	21,409	31	1·43	48·5	51·0	52·4	54·9	19·1	41·3	13·8	26·8	64·6	13·2	38·6	37·9
I. St. George's	50,931	98	1·89	25·5	41·1	43·3	62·8	15·3	34·3	21·6	22·9	62·8	20·6	35·0	42·1
II. Cheetham	43,640	13	0·29	10·1	10·7	18·8	19·6	7·5	10·9	6·9	4·6	19·2	9·5	11·8	12·5
II. Crumpsall	10,463	4	0·38	9·8	15·2	23·9	20·7	..	9·3	..	4·5	24·6	..	10·8	5·5
II. Blackley	14,421	2	0·14	12·1	23·5	3·8	3·5	3·7	6·9	3·5	3·1	39·6	..	10·0	2·9
II. Harpurhey	17,379	15	0·85	15·9	13·1	21·7	40·1	13·7	11·7	16·5	6·3	15·4	14·8	16·9	18·8
II. Moston	25,487	3	0·12	8·8	25·5	8·4	13·2	2·0	1·9	5·0	4·9	30·8	6·3	10·7	3·0
II. Newton Heath	42,447	44	1·02	15·6	31·4	43·3	36·0	16·8	22·0	13·3	7·3	45·5	13·2	24·4	28·4
II. Bradford	25,460	41	1·59	26·9	52·5	47·7	53·6	8·7	34·6	12·2	22·2	68·9	7·7	33·5	35·8
II. Beswick.....	12,130	18	1·46	8·4	60·8	43·2	23·0	19·0	37·6	20·2	23·9	75·3	9·7	32·1	18·6
II. Clayton	13,894	16	1·13	20·2	38·4	40·1	41·2	7·8	9·8	2·4	17·0	52·9	10·4	24·0	26·3
III. Ardwick	39,745	52	1·29	20·0	38·5	28·7	42·8	12·8	29·0	13·5	16·0	73·4	4·6	27·9	30·3
III. Openshaw	31,674	30	0·93	27·4	28·0	23·9	50·0	8·2	24·7	14·2	13·9	45·8	8·2	24·4	21·9
III. West Gorton	26,958	26	0·95	31·1	47·2	35·1	60·0	28·5	19·6	11·8	17·9	61·8	2·7	31·6	22·3
III. Rusholme and Kirk ..	42,393	13	0·30	14·0	12·7	10·5	21·2	2·4	11·1	3·4	2·4	31·4	2·7	11·2	12·3
III. Chorlton-on-Medlock .	54,504	39	0·70	23·9	23·8	29·1	32·8	13·7	25·9	5·1	11·4	28·0	8·0	20·2	23·8
III. Hulme	63,065	65	1·01	18·7	39·2	22·3	33·6	10·8	28·3	10·2	12·2	44·5	17·9	23·8	26·4
III. Moss Side	35,119	3	0·08	..	..	3·5	29·8	1·7	1·6	..	5·2	7·6	10·0	7·4	5·7
III. Withington	53,869	8	0·15	..	..	11·2	19·4	2·2	10·3	2·2	2·2	15·5	4·0	8·4	6·6
III. Gorton	44,555	24	0·53	..	..	..	..	..	..	..	16·7	31·1	10·3	..	15·1
III. Levenshulme	21,754	4	0·18	..	..	..	..	..	..	..	..	21·9	6·4	..	2·1

Thus, slight as the incidence of the season was, it visited the different districts with the usual discrimination in severity. The details are as follows:—

OPHTHALMIA NEONATORUM.

By Dr. M. A. C. Douglas.

During the year 1913, 642 cases of Inflammation of the Eyes were notified from various sources, and visited by the Eye Nurses.

Of these, 69 were cases of disease in children and adults: 53 suffered from simple Conjunctivitis, 6 had Blepharitis, 5 suffered from Keratitis with Ulceration of the Cornea, while 2 suffered from Phlyctenular Conjunctivitis and Abscess of Eyelid. Two cases of Ophthalmia were not notified till over a month old.

573 cases of Inflammation of the Eyes of newly-born children occurred. Of these, 331 were notified by the medical attendants (either private or at the Royal Eye Hospital) as cases of Ophthalmia Neonatorum. The remaining 242 cases were notified by midwives, but the medical attendants considered them to be cases of Conjunctivitis only.

The following table shows the distribution of cases both as regards the districts in which they occurred and the month of the year. The cases in which the corneae were affected are shown on the first table also.

The largest number of cases of true Ophthalmia occurred in Chorlton-upon-Medlock, thereafter in Hulme, Cheetham, and Ardwick.

The monthly rate of notified cases varies considerably, and there seems no special reason for the rise and fall in numbers. March heads the list, followed by February, January, April, and July.

TABLE A, 1913.—SHOWING THE NUMBER OF CASES OF OPHTHALMIA NEONATORUM NOTIFIED MONTH BY MONTH IN DISTRICTS.

Month of the Year	January	February	March	April	May	June	July	August	September	October	November	December	Total	Cases not Notified	Cases with Corneal Complications
Ancoats	2	2	1	4	4	2	1	..	2	1	3	1	23	25	6
Central	3	3	1	4	..	1	1	2	1	1	..	..	17	10	2
St. George's	2	2	3	2	1	4	..	..	1	1	2	1	19	11	5
Cheetham	2	..	2	2	4	3	4	4	1	..	2	1	25	10	7
Crumpsall	..	..	2	1	1	..	2	1	..	1	..	..	8	5	1
Blackley	1	..	..	..	..	..	..	..	1	..	..	..	2	1	..
Harpurhey	..	2	..	1	..	2	2	1	1	..	..	..	9	8	2
Moston	..	2	..	..	..	..	1	2	..	1	..	..	6	7	3
Newton	1	1	..	..	..	..	2	..	..	..	2	2	8	8	1
Bradford	..	1	2	1	..	1	..	2	1	2	2	..	12	13	3
Beswick	..	..	..	..	3	3	1	..	1	..	..	..	8	7	1
Clayton	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Ardwick	2	2	3	3	..	2	3	1	4	2	1	1	24	18	4
Openshaw	1	1	1	..	..	..	2	2	..	..	..	..	7	12	2
West Gorton	2	..	1	..	..	3	1	1	..	..	1	1	10	9	6
Rusholme	1	2	1	..	2	2	1	1	2	..	4	1	17	3	3
Chorlton-upon-Medlock	8	4	5	5	3	3	3	5	6	1	4	3	50	31	13
Hulme	4	7	11	4	1	..	..	2	5	3	3	4	44	35	4
Moss Side	..	2	2	1	2	..	3	..	..	2	1	1	14	3	1
Withington	..	..	..	..	..	..	1	..	..	1	1	1	4	5	2
Gorton	2	3	2	2	2	1	2	2	1	1	..	1	19	16	1
Levenshulme	1	..	2	..	..	..	..	..	..	1	..	1	5	4	2
CITY	32	34	39	30	23	27	30	26	27	18	26	19	331	242	69
Cases with Corneal Complications	15	4	8	8	5	3	4	9	4	1	7	1	69	..	69

The tables have been constructed as in last year's report, and explain themselves.

In 38 cases, other children had had Ophthalmia Neonatorum, and in one instance as many as 8 children had been infected at birth; in two, 5; in another, 4; while in many instances more than one of the previous children had suffered from Ophthalmia.

In 18 cases where the infants were suffering from Conjunctivitis there was a history of eye trouble in other children at birth.

TABLE B—1913. OPHTHALMIA NEONATORUM.

	Age						Parity										Labour			HISTORY OF MOTHER.					
	—20	—25	—30	—35	Over 35	Not Ascertained	1	2	3	4	5	6	7	8	9+	Not Ascertained	Normal	Abnormal	Attendant not present at birth	No. of mothers having had previous cases of Ophth. Neon.	History of yellow discharge	Legitimacy: Legit.	Legitimacy: Illegit.	Definite negligence of attendant Midwife
Notified ..	43	92	82	60	48	6	77	60	50	41	26	16	17	14	25	5	298	33	73	38	211	324	7	—
Not notified	10	50	70	58	42	12	45	39	32	20	19	16	21	12	27	11	229	13	47	18	132	238	4	—

Total cases notified ... ... $^{331}_{242}$=573
Total not notified ... ...

Table C shows the day of onset, the attendant at birth, and the place of treatment.

The greatest number of onsets was on the third day of life, and in over one-half of the cases the first signs of disease appeared during the first four days.

One-third of the cases were treated by private doctors, and the remaining two-thirds by the doctors of the Royal Eye Hospital.

In 69 instances there was involvement of the cornea, and 30 of these cases were admitted as in-patients to the Royal Eye Hospital.

TABLE C—1913. OPHTHALMIA NEONATORUM.

	Interval in days between birth and onset											Attended by				Where treated			
	1	2	3	4	5	6	7	8	9	10+	Not ascertained	Midwife	Doctor	Midwife and Doctor	Not attended	Home	Out-Patients at Hospital	In-Patients at Hospital	No Doctor
Notified	33	48	73	48	20	30	23	20	11	22	3	260	38	30	3	133	168	30	...
Not notified ..	31	29	43	28	20	24	16	13	9	14	15	223	7	10	2	172	44	5	21

Total notified cases ... ... 331.

Total non-notified cases ... ... 242.

TABLE D.—CASES WITH INVOLVEMENT OF THE CORNEA.

Right Eye	10
Left Eye	25
Both Eyes	34
	69

Table E shows the results of the 331 cases of true Ophthalmia, and of the 242 of Conjunctivitis in newly-born infants :—

	Complete Recovery	One Eye Lost, Other Normal	One Eye Lost, the other Damaged	Both Eyes Lost	Both Eyes Damaged	One Eye Damaged	Death before recovery	TOTAL
Notified ..	317	3	1	2	0	1	7	331
Not notified	238	..	..	..	..	..	4	242
	555	3	1	2	0	1	11	573

The number of cases with corneal involvement was large—69 in all—but the results are very satisfactory, as 35 have completely recovered. In 7 instances death occurred from causes other than Ophthalmia before the infants' eyes were better.

In the case in which one eye is recorded as lost, this eye was beyond hope at the first visit to the Royal Eye Hospital, as was the case in one of the two instances noted, in which both eyes were blind. In the other instance the loss was entirely due to the midwife in attendance, and the condition was not discovered till the mother was notified as a case of Puerperal Fever. These cases afford further proof of the efficacy of prompt notification and treatment.

In one of the 7 cases in which death occurred "before recovery," the left cornea had a large ulcer, the infant was premature and very weakly, and, although medical aid was obtained at the onset, the vitality of the child was very low. This was the second child in the family who had suffered from Ophthalmia, the other, now 2 years old, having only one eye.

The total numbers of cases of Ophthalmia and Conjunctivitis in newly-born infants were : in 1911, 525 ; in 1912, 667 ; in 1913, 573. The percentage of cases with corneal complications in 1911 was 7·23, as compared with 11·39 in 1912, and 12·04 in 1913.

The two nurses appointed in 1911 have continued the work in 1913 in a most efficient manner. The routine followed has not been altered.

ACUTE ANTERIOR POLIOMYELITIS.

By Dr. W. St. C. McClure.

During 1913, 6 cases of Poliomyelitis were notified, and the diagnosis subsequently confirmed by Dr. McClure. One of these was an old case, the acute attack having occurred in 1911.

In 3 of the remaining cases, the nature of the illness was not recognised in the first instance, the diagnosis being given as Hip Disease, Gastritis, and Rheumatism respectively.

The 6 cases were widely separated one from the other, and no connection between them was discovered. No common factor of causation was found.

The age and sex of those attacked was as follows :—1 to 5 years : male, 2 ; female, 2. 5 to 10 years : male, 1. 15 to 20 years : male, 1.

Two deaths occurred in the house of one of the notified cases, and it appears probable that these two deaths were due to Poliomyelitis, although not certified as such. The circumstances were as follows :—

A child A, aged 3 years, was notified as suffering from Poliomyelitis on September 27th, the illness having commenced on July 17th, when it was diagnosed as Rheumatism by the Medical Attendant.

Child B, aged 3 years, brother to A, died on July 17th rather suddenly. A post-mortem was made, and some slight pleuritic adhesions found. Death was certified as due to Pleurisy. This child commenced to be ill on July 14th, complaining of headache and backache. He became very weak, and died on July 17th, as stated above.

Child C, aged 5 years, brother to A and B, was taken ill on July 17th, and suffered from Fever, Malaise, and Headache. The mother states that he lost the use of his body and legs. He died on July 20th, and death was certified as due to Rickets and Heart Failure.

Mortality.—There were no fatal cases among those notified.

The serious nature of Poliomyelitis is manifested not only by the high mortality which attends an outbreak, but also by the deformed and maimed condition in which it leaves the majority of those attacked. It is, therefore, of the utmost importance that every factor which is a possible cause, or which may point towards some means of prevention, should be recorded with every care.

The study of epidemics which have occurred in various parts of the world, and the steady research work which has been carried on, chiefly in foreign laboratories, have added greatly to our knowledge of the subject.

The following is a brief survey of the principal facts which have been brought to light by observers on the Continent and in this country :—

Epidemiology.—Previous to 1905, little was heard of this disease. Since that date many epidemics have been recorded throughout Europe, America, Norway, and Sweden.

In Great Britain, although we have been familiar for many years with sporadic cases of Infantile Paralysis, it was not until 1911 that the disease showed signs of epidemic infectivity.

That those isolated cases of Paralysis occurring among infants are of the same nature as the epidemic. Paralysis has been definitely proved by Flexner.

In 1911, epidemics occurred in Devon, Cornwall, and in the Midlands.

Other outbreaks have been recorded in this country, principally those in Essex in 1908, Somerset 1909, Cumberland 1910, and the conclusion which must be arrived at is that epidemics have become increasingly common during recent years.

Age.—The disease is one which attacks children, the large majority of cases occurring in children under 6 years of age, infants under 6 months old, however, rarely being affected. At the same time, in some epidemics, notably that recorded in Sweden by Wickman (1906), adults have been attacked in a large proportion of cases.

Infectivity.—That the disease is due to a micro-organism, and is infectious, has been proved beyond doubt by the experiments of Flexner and others.

It was in 1909 that Landsteiner and Popper announced the successful transmission of Poliomyelitis to monkeys. These experiments were confirmed later by Flexner and Lewis, and by Levaditi. It was shown that infection of a monkey could be produced by inter-cerebral injection of a filtered mixture of spinal cord obtained from a child dead of the disease.

More recently, Flexner and Noguchi have announced that they have been successful in cultivating the virus. Monkeys inoculated with the cultures have developed typical Poliomyelitis.

Flexner is strongly of the opinion that the nasal mucous membrane is the site of both ingress and egress in man. The virus has been detected in the secretions from the nose, throat, and intestine of true and abortive cases of Poliomyelitis. More important still, Flexner and others have demonstrated beyond cavil the existence of healthy human carriers.

Spread of Infection.—The theories which have been advanced to explain the spread of Poliomyelitis include infection by dust, by domestic animals, by flies, by food, and by personal contact with other cases.

Sufficient evidence has not been adduced to support any one of these theories predominantly. Dust, food, domestic animals must be discarded as the principal causes.

The preponderance of cases in the late summer and autumn months early suggested an insect carrier of infection. House flies can act as passive contaminators, since the virus survives upon the body and within the gullet of these insects.

Experimental work by Flexner and Rosenau with a common variety of biting fly known as Stomoxys Calcitrans seemed to show the possibility of its being an active agent in the transmission of the disease, but Flexner on repeating his experiments has not so far been able to confirm his previous results.

It has been proved by Kling, Wernstedt, and others, that the nasal secretions of those in the acute stage of Poliomyelitis are infective to monkeys. It has also been shown that the nasal secretions of abortive cases, and even of apparently healthy persons who have been in contact with cases, are also infective.

The virulence and infectivity of the germ varies considerably. It certainly varies in different epidemics. In Manchester during 1912 and 1913 the infectivity, so far as could be ascertained, was practically nil, but it is possible that human carriers had more to do with the spread than was known.

It is probable that, like most other infectious diseases, there is no single source of infection, but that abortive cases and carriers are the most important cause of the spread.

Prophylaxis and Treatment.—One of the most important precautionary measures, therefore, which should be taken is the destruction of all discharges from the patient and the application by means of a spray of a 1 per cent. solution of hydrogen peroxide to the throats and nasal passages of all contacts.

The patient should be isolated for at least two weeks from the onset of illness, and the sick room and its contents afterwards disinfected.

Treatment, in the main, must be symptomatic, directed towards rest of the affected parts, allayment of pain, and prevention of contractures and deformities.

It is held by Dr. Robert Jones that massage of the paralysed muscles is harmful. He commends the use of irremovable splints on the ground that a paralysed muscle is easily damaged by slight violence, such as massage, and by passive stretching to which paralysed muscles are subjected. Dr. Jones' article in the "British Medical Journal" of May 30th, 1914, should be read.

The specific treatment of Poliomyelitis is in its infancy. Some success has been attained by the experimental use of urotropin in monkeys. When this drug is administered by the mouth, it can be demonstrated shortly afterwards in the cerebro-spinal fluid. When inoculation of the virus and administration of the drug are begun together, development of Poliomyelitis is sometimes, but not always, averted.

An immune serum has been experimented with by Flexner, and possibly some success may be looked for in this direction.

STATEMENT OF WORK OF THE HEALTH VISITORS IN 1913.

By Miss E. M. Howard, Lady Superintendent.

During the year 1913 the Infant Life Preservation Sub-Committee met nine times.

Two of the Health Visitors resigned, both of whom were in receipt of 30s. per week. Four new appointments were made, one at a commencing salary of 30s. a week, and the other three at 40s. a week.

At the end of the year the staff consisted of the Superintendent; two female clerks—one at a salary of 20s. a week, and the other at 25s.; 17 Health Visitors, 11 of whom were certificated, and received salaries ranging from 30s. to 40s. a week; and 6 others, who were taken over from the Ladies' Public Health Society by the Corporation in 1908, and whose salaries vary from 18s. to 30s. a week.

All the Health Visitors are provided with two uniforms a year, consisting of navy blue tailor-made costumes, hats, and boots.

A leaflet specifying the list of duties of the Health Visitors was drawn up in 1908, and was published in the Annual Report for that year.

A table giving a detailed account of the Health Visitors' work is appended, and from this it will be seen that there have been 5,239 primary and 46,698 subsequent visits paid to infants during the year. This enumeration only includes the regular monthly visits, and does not allow for numerous other calls when there is sickness, poverty, neglected children, or sanitary work to be attended to, although at each visit the Health Visitor sees the infant, and gives advice where necessary.

A careful record is kept of every infant whose existence comes to our knowledge; and every time a change of food is advised, or medical assistance sought, the facts are notified on the Infant Sheet.

A certain number of the babies are weighed each month, especially the delicate ones, and it is interesting to note how fast the old superstition is dying out that to weigh a baby is of ill-omen. Now the mothers are anxious to have the weight recorded, and to watch the progress the child is making.

In connection with notified cases of Phthisis, 3,041 monthly visits were made, and 2,407 visits *re* cleansings, done either by the Corporation or by the tenants themselves.

The house-to-house inspections numbered 4,049, and re-inspections 2,589. Whilst on these visits the Health Visitors found 1,658 defects, and referred 1,245 to the Sanitary Department. This branch of the work is perhaps the most difficult, as some of the people naturally resent having their houses systematically inspected, but with tact and perseverance the difficulties are generally overcome, and the Health Visitors are able to combine the two-fold work of seeing that disrepairs are remedied, dirty houses cleaned, and of imparting helpful knowledge and advice as regards the health of the children, and even of the mother herself. That these inspections are useful is obvious from the fact that, apart from the 1,019 defects remedied by the Sanitary Department, the Health Visitors record that 490 bedrooms, 657 kitchens, 1,403 yards, 1,274 closets, and 967 cellars, ceilings, etc., have been limewashed, 912 rooms cleaned other than by limewashing, and also 621 defects remedied without the intervention of the Sanitary Inspector.

Apart from house-to-house inspections, the visiting of infants, and notified cases of Phthisis, there are many other duties which the Health Visitor is called upon to perform, but which can only be touched upon briefly in this report.

STATEMENT OF WORK DONE BY THE HEALTH VISITORS DURING THE YEAR 1913.

Districts	House-to-house inspections: Inspections: Number	Overcrowded	Distepair	Dirty	Cellar dirty or in disrepair	Yards defective	Closets defective	Referred to Sanitary Dept.	Re-inspections: Number	Number of visits	Defects found	Defects remedied	Visits re defects	Referred to Sanitary Dept.	Work done by Sanitary Dept.: Overcrowding abated	Defects remedied	Work done under the direction of Health Visitors: Limewashing: Number of visits	Bedrooms	Kitchens	Yards	Closets	Cellars	Coal-places	Ceilings	Staircases	Others	Cleansing other than Limewashing: Rooms	Cellars	Yards	Closets	Floors	Others	Infants Visited: Primary	Subsequent	Visits re Phthisis: Cleansings by: Monthly	Corporation	Tenants	Visits re Sick Children	Neglected Children: New Cases	Visits	Charity Cases: New Cases	Visits	Number of families assisted	Recommends given	Mothers Meetings: Number	Average Attendance	Vermin Children: New Cases	Visits	Visits re removal of infants	Visits re complaints and special cases
Ancoats—West	222	4	48	148	3	13	11	18	424	68	26	59	60	1	42	277	183	141	160	163	12	27	41	94	19	...	77	1	15	5	280	73	211	2812	259	31	196	7	33	58	...	1	...	2	...	...	...	..	3	...
„ North	144	3	9	29	...	7	12	4	35	23	3	11	...	15	1	...	136	32	51	66	69	15	11	9	2	...	30	...	...	...	2	...	429	3732	268	18	227	...	...	4	..	..	59	33	39	40	7	3	...	...
„ Central	305	1	98	92	9	41	33	24	62	61	...	22	5	51	3	43	30	7	9	15	17	...	2	5	4	...	...	2	1	1	...	...	221	3017	100	37	32	...	35	18	1	...	7	1	...	...	1	30	405	18
„ South	448	1	63	192	2	25	12	23	315	168	7	92	...	40	1	31	304	69	163	263	263	44	77	126	55	1	236	48	9	16	2	3	294	2610	251	15	224	10	...	25	...	...	154	3	30	63	11	12	...	1
„ East	254	3	101	104	...	56	43	128	254	144	3	17	94	184	16	288	220	45	68	119	118	3	24	44	14	...	157	...	10	8	...	...	237	3048	175	69	84	...	13	2	...	131	135	...	35	75	3	4	...	6
London Road	289	13	83	159	6	42	28	94	71	26	4	11	3	47	3	17	72	29	17	60	55	10	6	8	9	3	26	...	1	...	13	5	246	2641	216	145	90	44	24	47	9	5	8	5	..	..	11	24	..	22
Deansgate	...	...	...	...	...	...	...	...	4	12	13	1	...	49	3	...	49	7	6	21	22	6	2	5	...	...	5	...	1	...	...	...	390	2750	249	80	34	10	5	15	.	...	...	...	..	..	1	..	..	25
St. George's—North	434	2	87	55	...	24	22	1	169	301	3	73	...	37	...	61	63	36	25	18	19	1	4	5	16	2	38	3	15	15	76	2	396	2546	207	103	160	...	...	...	...	...	129	...	37	28	7	7	33	—
„ East	524	3	36	5	18	52	18	22	93	55	4	48	8	20	...	30	104	7	18	50	50	14	...	...	1	...	4	...	...	...	...	...	288	3200	361	181	175	...	...	...	...	3	11	...	38	15	1	—	16	2
„ Central	398	2	28	162	5	7	10	5	349	295	6	53	2	37	4	15	94	23	28	227	227	3	15	10	2	2	101	...	1	...	191	1	276	2710	78	26	16	4	5	17	...	...	17	12	...	..	...	13	94	37
C.-on-M.—North	343	3	104	108	16	51	35	50	290	235	3	70	9	88	1	53	199	57	46	180	207	51	7	21	14	5	56	6	11	5	79	5	322	2579	243	73	18	7	54	97	...	4	2	...	..	..	...	...	41	3
„ South	269	1	51	87	46	1	11	48	172	99	7	14	2	47	1	39	55	19	10	102	98	38	...	19	1	2	103	...	...	...	...	...	353	3151	108	33	16	...	1	2	2	...	...	...	...	...	4	13	15	11
Hulme—Central	46	...	9	15	7	...	...	2	...	...	...	...	...	26	...	...	8	...	4	4	4	1	..	...	...	...	...	...	...	...	...	...	369	2108	34	8	3	47	85	110	11	24	4	...	..	...	12	84	...	1
„ East	196	...	60	47	16	14	13	33	106	41	3	28	7	26	...	16	58	5	40	80	78	33	3	4	1	1	28	7	10	4	...	...	282	1980	125	53	1	10	7	17	...	..	..	..	...	...	13	...	...	...
Gorton—West	16	...	3	6	...	4	1	...	80	105	6	41	...	42	2	1	34	12	11	35	35	...	3	18	4	...	11	...	...	...	...	4	467	3159	194	20	74	8	52	15	1	...	6	1	...	...	...	45	439	0
Openshaw	161	7	65	46	1	18	37	38	165	47	31	81	...	35	...	71	...	1	1	...	...	...	...	...	...	...	40	2	2	5	...	...	304	2955	170	18	138	17	12	36	3	2	5	2	...	...	...	36	3	5
Ardwick	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	66	315	...	...	...	1	1	5	...	...	...	...	...	...	...	16	...	8
Special Nurse	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	118	1385	...	...	...	5	19	20	3	6	...	...	..	..	15	33	24	36
Total	1049	43	845	1255	129	355	286	490	2589	1683	119	621	190	755	77	942	1609	490	657	1403	1274	246	195	368	142	16	912	69	76	59	643	93	5239	46698	3041	919	1488	170	346	488	30	176	534	59	17	44	73	339	1073	183

In 1909 a Cleansing Station was opened by the Sanitary Committee at the Corporation Depôt in Oldham Road for the cleansing of verminous children. School children found to be in a verminous condition are sent by the Education Authorities to the Cleansing Station, and at the same time a notice to this effect is sent to the Medical Officer of Health, who refers the case to the Health Visitor for that district. It is her duty to visit and report to the Medical Officer of Health upon the condition of the house, and especially of the bedrooms and bedding. She is required to inspect all the children in the house, whether of school age or under, and to instruct the mother, or person in charge, as to treatment, and also to continue to visit at regular intervals until she can report that the house has been cleansed, the bedclothes washed, and the children kept clean. This work has to be specially arranged, as those children who attend school can only be seen during the dinner hour or on Saturday, and frequently when the Health Visitor calls to inspect the house and children, she finds that the family removed months ago, and much time is spent in trying to trace them. If, after making full enquiries, the family cannot be found, a letter is sent to the School Medical Officer, Dr. Ritchie, asking him to obtain the correct address.

The maximum number of children who can be cleansed in one day is 10, and as the Cleansing Station is only used two days per week, the number of children cleansed could not exceed 20 per week. As a matter of fact, the average is considerably less, because when the examination at school takes place, before removing the children to the Cleansing Station, some are found to be clean and others are absent.

The Station has been closed for several months this year, as Dr. Ritchie required his Nurses for other work.

The subject, from a public health point of view, is very important, as numbers of children with vermin in the head or on the body suffer considerably in health, and are commonly afflicted with such ailments as Swollen Glands, Abscesses, Sores on Head and Body, Sore Eyes, Discharging Ears, Adenoids, and Enlarged Tonsils and Anæmia.

It must be remembered, too, that these children are a source of danger to the public.

The question of how best to deal with these verminous cases was brought up for discussion at a meeting of the Infant Life Preservation Sub-Committee, and the Medical Officer of Health was instructed, together with the Chairman and Miss Howard, to interview Dr. Ritchie, the School Medical Officer, and

see whether it would be possible to cleanse a larger number of children, and prosecute parents who failed, after cleansing, to keep their children clean. The outcome of this and other interviews was that a Special Nurse was appointed to undertake the cleansing of verminous children at the Cleansing Station, under the supervision of the Superintendent of Health Visitors, and it was also arranged that, in cases of prosecution, she should give evidence in court. She is required to visit the homes of children, and, where possible, cleanse the head of children both under and over school age.

I understand, also, that the Education Committee have appointed four Nurses specially to deal with verminous cases.

Those cases which come outside the area worked by a Health Visitor are undertaken by a Nurse specially appointed to deal with them, or by the District Sanitary Inspector.

Then again it has been found advisable to pay monthly visits to delicate children threatened with Phthisis, or children of consumptive parents. The object of those visits is to see that the children get medical advice and treatment in time, and that they are sufficiently clothed and fed. In order to ensure the latter, it is sometimes necessary to send warning letters to the parents; or, in cases where poverty is causing suffering, efforts are made to procure assistance either from the Board of Guardians, District Provident Society, or other agency.

The visiting and constant supervision of neglected children takes up a considerable time. 122 cases were referred to the N.S.P.C.C. during the year, and many others were warned again and again without being reported. Although only 834 such visits in connection with this work are recorded, additional ones were paid, but are not noted under this particular heading, inasmuch as they were made in the ordinary course of house-to-house visiting or other branches of the work, and are entered under the respective headings.

Through the kindness of the Lord Mayor we received 12 Charity Forms, which entitled us to flannel and blankets, for which we are very grateful. We also received a number of flannel garments for infants, and these were distributed by the Health Visitors during the winter to deserving cases.

534 families have been assisted with food or clothing, and 59 recommends for the Boys' and Girls' Summer Camp, Lord Mayor's Charity Forms, etc., were given away by the Health Visitors during the year, and many of our delicate mothers and children have spent three weeks at the Southport Convalescent Hospital, or other Convalescent Homes.

We are greatly indebted to the Medical Staff at Gartside Street Dispensary for the courteous and considerate manner in which they have dealt with the numerous cases which have been referred to them.

Our thanks also are due to the Hon. Secretary of the Police-Aided Clothing Association and the Superintendent of the Wood Street Mission, who have always been so ready to assist us with clothing for our poor children.

In conclusion, I wish to express my gratitude to the Chairman and members of the Infant Life Preservation Sub-Committee for the kind interest they have taken in the Health Visitors' work, and for the appreciative manner in which they have received my reports throughout the year.

A summary of the work done by the Health Visitors under the supervision of the Ladies Society for Visiting the Jewish Poor and of the Medical Officer of Health is given in the following table :—

Work of the Jewish Health Visitors, year ending 31st December, 1913.

DISTRICT	Houses Visited		Condition of Houses							No. of Houses containing Lodgers	Complaints requiring action by Sanitary Department	Sickness			Leaflets left at Houses
	First Visit	Not First	Dilapidated	Not Dilapidated	Clean	Dirty	Improved since last Visit	Not Improved	Overcrowded			Infectious	Non-Infectious	Total Sickness	
Red Bank	...	991	76	915	941	50	185	96	...	327	175	59	371	430	540
Strangeways	...	732	4	728	720	12	155	35	...	200	139	38	89	127	727
Total	...	1723	80	1643	1661	62	340	131	...	527	314	97	460	557	1267

DISTRICT	Disinfecting Powder left at Houses	Limewashing							Reports as to Children being Neglected (clothing, food, &c.)	Help Rendered Help rendered includes :—Giving food, clothing, &c., advising mothers as to care and treatment of children, making of sick beds, cleaning houses for sick persons, obtaining recommends for Convalescents, &c.	Infants Visited	Visits re Phthisis	Re-inspection of Houses
		Living and Bed Rooms	Kitchens	Yards	Closets	Cellars	Coal-places	Ceilings	Staircases					
Red Bank	849	26	53	85	81	9	...	3	3	2	260	923	94	636
Strangeways	716	4	8	41	40	21	1	10	1	...	129	724	295	183
Total	1565	30	61	126	121	30	1	13	4	2	389	1647	389	819

TUBERCULOSIS.

Manchester has been conspicuous in the past for its high death-rate from Tuberculosis, both pulmonary and other, and remains so, although a marked decline is shown in respect of all forms of the disease. In 1901 the death-rate from Pulmonary Tuberculosis was 2·09 per 1,000 persons living; in 1914 it was 1·42 per 1,000. It is true the latter figure relates to an extended City, but the decline is still very marked, and the death-rate in 1913, viz., 1·42 per 1,000 persons living, is decidedly an improvement on that for previous years. Similarly the death-rate from other forms of Tuberculosis shows a decline, though a slight one, on the death-rate in 1912, but a marked decline as compared with the average for 1903–1912.

Table I.

Death-rates from Phthisis.

	Statistical Divisions	1903	1904	1905	1906	1907	1908	1909	1910	1910 †	1911	1912	Average 1903-1912	1913
				(1·68)	(1·81)	(1·80*)	(1·74)	(1·81)						
	City of Manchester	**1·85**	**1·98**	**1·56**	**1·71**	**1·70**	**1·65**	**1·70**	**1·49**	**1·51**	**1·56**	**1·53**	**1·67**	**1·42**
	I. Township	3·00	3·14	3·00	2·99	3·09	2·79	3·18	2·63	2·73	2·63	3·22	2·96	2·79
	II. N. Manchester	1·05	1·23	0·96	1·03	1·16	1·08	0·89	1·12	1·18	1·17	1·05	1·07	0·99
	III. S. Manchester	1·79	1·90	1·33	1·59	1·47	1·56	1·65	1·33	1·31	1·44	1·29	1·53	1·26
				(1·53)	(1·79)	(1·64)*	(1·75)	(1·88)						
I.	Ancoats	2·43	2·26	2·78	2·48	2·82	2·19	3·08	1·97	2·02	2·43	2·75	2·51	2·59
I.	Central	3·68	4·35	3·58	4·28	3·85	3·16	3·76	3·15	3·18	2·75	3·95	3·65	2·76
I.	St. George's	3·09	3·23	2·89	2·79	2·95	3·09	2·99	2·90	3·08	2·74	3·28	2·99	2·96
II.	Cheetham	0·80	1·11	0·87	0·78	1·06	1·07	0·77	0·85	0·88	1·20	0·84	0·95	0·95
II.	Crumpsall	0·99	0·44	0·43	0·65	1·28	0·63	0·74	0·95	0·90	0·98	0·68	0·77	0·85
II.	Blackley	0·98	1·61	1·59	0·94	1·15	1·30	0·91	1·12	0·85	0·97	0·93	1·15	0·68
II.	Harpurhey	1·50	0·69	0·65	1·24	1·31	0·80	0·81	0·89	1·36	1·41	1·51	1·08	0·74
II.	Moston	0·63	1·17	1·08	0·72	0·78	0·76	0·94	0·94	1·06	0·73	0·85	0·86	0·81
II.	Newton	1·27	0·80	0·79	1·19	1·47	1·18	1·20	1·59	1·40	1·35	0·96	1·18	1·04
II.	Bradford	1·23	1·30	1·29	1·40	1·31	1·40	0·94	1·57	1·60	1·31	1·42	1·31	1·31
II.	Beswick	1·08	1·57	1·31	1·37	0·88	0·86	0·79	1·26	1·37	1·46	1·63	1·22	1·22
II.	Clayton	0·71	0·94	0·95	0·72	0·81	1·48	0·63	0·76	1·03	0·76	0·94	0·87	1·20
III.	Ardwick	1·62	1·78	0·98	1·81	1·52	1·28	1·70	1·33	1·50	1·83	1·28	1·51	1·09
III.	Openshaw	1·33	1·35	1·06	0·80	1·35	1·32	1·64	0·94	0·89	1·04	1·03	1·18	1·03
III.	West Gorton	1·58	1·53	1·38	1·65	0·94	1·31	1·25	1·41	1·51	1·81	1·19	1·40	1·24
III.	Rusholme	1·10	1·00	1·00	1·18	1·27	1·49	0·88	1·24	1·16	0·68	0·92	1·07	1·05
III.	C.-on-M.	1·76	2·47	1·90	2·18	2·02	2·12	2·45	1·96	1·90	2·16	2·01	2·10	2·33
III.	Hulme	2·50	2·26	2·07	2·19	2·04	2·28	2·38	2·02	1·87	2·23	1·99	2·19	1·78
III.	Moss Side	1·17	0·96	0·75	1·00	0·99	1·14	1·25	1·41	1·21	0·86	1·17	1·07	0·67
III.	Withington	1·05	0·78	0·50	0·84	0·83	0·80	0·68	0·64	0·59	0·81	0·72	0·76	0·77
III.	Gorton	1·47	1·43	1·16	1·33	1·33	0·95	1·07	0·91	0·98	1·13	0·88	1·16	0·99
III.	Levenshulme	0·44	1·14	0·85	0·46	0·77	0·69	0·86	0·60	0·68	0·95	1·00	0·77	0·95

DEATH-RATES FROM TUBERCULAR DISEASES OTHER THAN PHTHISIS.

STATISTICAL DIVISIONS		Mean Death-rate 1871-1900	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	Average 1903-1912	1913
City of Manchester		**0·90**	**0·76**	**0·69**	**0·56**	**0·61**	**0·56**	**0·59**	**0·57**	**0·59**	**0·52**	**0·54**	**0·59**	**0·51**
I. Manchester Township		0·99	0·95	0·79	0·69	0·87	0·76	0·83	0·72	0·72	0·66	0·75	0·77	0·77
II. North Manchester		0·60	0·41	0·41	0·42	0·37	0·36	0·36	0·42	0·41	0·48	0·47	0·41	0·37
III. South Manchester		1·03	0·90	0·82	0·58	0·65	0·62	0·64	0·61	0·62	0·49	0·54	0·64	0·52
I.	Ancoats	1·03	0·92	0·91	0·82	0·99	0·90	1·03	1·02	0·82	0·85	0·86	0·91	0·64
I.	Central	1·03	0·70	0·54	0·59	0·95	0·86	0·71	0·66	0·67	0·44	0·63	0·67	0·41
I.	St. George's	0·95	1·11	0·85	0·65	0·74	0·62	0·72	0·51	0·65	0·61	0·71	0·71	1·02
II.	Cheetham	0·41	0·26	0·35	0·37	0·22	0·10	0·35	0·19	0·23	0·26	0·30	0·26	0·27
II.	Crumpsall	0·60	0·33	0·22	0·11	0·22	0·32	0·31	0·11	0·32	0·69	0·29	0·29	0·28
II.	Blackley	0·73	0·00	0·54	0·64	0·21	0·21	0·30	0·91	0·30	0·74	0·21	0·40	0·20
II.	Harpurhey	0·93	0·34	0·42	0·45	0·67	0·50	0·34	0·24	0·51	0·94	0·64	0·50	0·51
II.	Moston	0·57	0·42	0·65	0·18	0·11	0·62	0·33	0·27	0·45	0·09	0·40	0·35	0·27
II.	Newton	0·52	0·57	0·27	0·39	0·29	0·36	0·33	0·36	0·36	0·34	0·46	0·37	0·37
II.	Bradford	0·75	0·49	0·49	0·69	0·68	0·52	0·50	0·67	0·71	0·71	1·03	0·64	0·58
II.	Beswick	0·75	0·67	0·49	0·33	0·57	0·32	0·39	0·95	0·55	0·69	0·26	0·52	0·57
II.	Clayton	0·68	0·51	0·56	0·61	0·40	0·44	0·34	0·69	0·29	0·61	0·43	0·48	0·35
III.	Ardwick	1·30	0·94	1·02	0·98	0·75	0·60	0·70	0·68	0·67	0·65	0·73	0·77	0·67
III.	Openshaw	1·12	1·11	0·99	0·78	0·73	0·66	0·58	0·58	0·77	0·65	0·51	0·73	0·50
III.	West Gorton	1·12	0·76	0·81	0·64	0·73	0·66	0·82	0·70	0·62	0·55	0·71	0·70	0·66
III.	Rusholme and Kirks...	0·84	0·86	0·46	0·58	0·49	0·75	0·47	0·29	0·48	0·25	0·27	0·49	0·37
III.	Chorlton-upon-Medlock	0·83	0·77	0·67	0·58	1·10	0·54	0·64	0·69	0·63	0·56	0·49	0·66	0·54
III.	Hulme	1·03	0·97	0·92	0·83	0·92	0·96	0·68	0·79	1·08	0·53	0·76	0·84	0·84
III.	Moss Side	..	..	..	..	..	0·25	0·76	0·66	0·39	0·33	0·47	..	0·39
III.	Withington	..	..	..	..	..	0·36	0·47	0·34	0·42	0·36	0·38	..	1·24
III.	Gorton	..	..	..	..	..	..	..	..	0·63	0·63	0·49	..	0·60
III.	Levenshulme	..	..	..	..	..	..	..	..	0·18	0·35	0·47	..	0·14

The causes of this decline are, no doubt, various. A great and steady improvement has occurred in the conditions of housing holding in the centre of Manchester, the City has prospered in recent years, and the average nutrition of the citizens has, no doubt, been better in consequence. But, unquestionably, the attention directed to the preventive aspects of the disease—the adoption of Voluntary Notification in 1899, with the administrative measures therewith connected, and the work done under the Manchester Milk Clauses obtained in 1899—have greatly aided the other causes in operation.

The administrative measures adopted were, briefly, as follows :—A Special Tuberculosis Office was established, and placed in charge of an able organising Clerk. The particulars notified by Practitioners were transferred, as they came in to Special Enquiry Forms, which have been filled up first by Medical Officers, and subsequently by special trained officers. On these are founded the various administrative procedures taken. The persons and families visited are instructed as to the measures of precaution to be taken, so that the disease may be prevented from extending ; the procedures required in respect of disinfection are determined ; the condition of the house is examined, and defects remedied ; the history of the illness is recorded, with previous illnesses and accidents sustained by the patient ; the condition of health of the remaining members of the family is ascertained, the family history is recorded, and the circumstances of the person or family. Finally, the histories of exposure to infection are investigated.

It was assumed that this period is a dividing one, and that the family, having been thoroughly instructed, and the house disinfected, there should be no more infection of other members of the family.

With a view, however, to sustain the efforts of the family, the case is kept in view, and subsequent visits are paid by the District Inspectors of Nuisances and Health Visitors to see that the instructions given are carried out. Every three months the house is specially cleansed.

The facts ascertained are recorded in card index systems and registers. The card index systems are three in number, and relate to persons, houses, and places of employment, the last-named showing at a glance factories and workshops specially visited by the disease.

Special efforts have been made to secure cleanliness in common lodging-houses, public-houses, and by means of a bye-law in tramcars. In the last, the improvement is remarkable.

Admonitory cards in reference to spitting are suspended in common lodging-houses, factories, workshops, and public-houses.

It was very soon found, as matter of experience, that some measure of institutional treatment for persons other than those received into the Union Hospitals was urgently called for, and was almost necessary for the successful working of notification ; and, accordingly, the Clayton Smallpox Hospital has been utilised for a number of years, mostly for the reception of advanced cases of Pulmonary Tuberculosis.

Moreover, 20 beds were placed by the Board of the Consumption Hospital at the disposal of the Corporation for the treatment of less advanced cases of the disease, and these also were a great aid to notification.

An important step forward was taken in 1909, when an Order of the Local Government Board made Tuberculosis of the Lungs obligatory on the Medical Officers of the Poor Law Service; in 1911 a second Order extended the obligation to other Institutions; in 1912 a third Order required private practitioners to notify; and finally, in February, 1913, the obligation was extended to all forms of Tuberculosis capable of being diagnosed clinically.

The effect of these Orders on the number of cases notified is seen in Table 3, which gives the number of cases of Tuberculosis of the Lungs notified year by year, sub-divided into Poor Law cases, institutional cases, and cases notified by private practitioners.

TABLE 3.

PHTHISIS, 1913—NUMBER OF NEW CASES OF PULMONARY TUBERCULOSIS NOTIFIED.

Year	Poor-law Cases	Institutions	Private Practitioners	Total
1900*	578	455	540	1573
1901	625	373	341	1339
1902	667	305	303	1275
1903	556	550	251	1357
1904	512	440	250	1202
1905	527	588	291	1406
1906	565	510	304	1379
1907	634	646	310	1590
1908	659	498	346	1503
1909	681	542	384	1607
1910	543	760	356	1659
1911	517	897	423	1837
1912	488	947	969	2404
1913	345	717	1350	2412
Total	7897	8228	6418	22543

* This table does not include 425 cases notified in 1899.

It will be seen that the total number notified has increased year by year since 1909, while at the same time the number notified by private practitioners has very greatly increased. The number of Poor Law cases has diminished. The number of institutional cases, on the other hand, has increased, and reached its highest point in 1912.

For this distribution of the cases, the National Insurance Act and the administration of the Act in Manchester are responsible. By the provisions of this Act many cases have been removed from the care of the Guardians, and by the Manchester system they have been kept in the hands of practitioners.

Table 4 classifies cases of Tuberculosis, other than pulmonary, visited and registered during 1913, according to the seat of the disease and the ages at which the cases are recorded.

It will be seen that the number of cases is greatest at ages 0–4, and diminishes with advancing years. A very different picture is presented from that shown by Tuberculosis of the Lung. So striking a difference suggests a different mode of entrance of the infection.

Cases of Tuberculosis of the Abdominal Organs, and of the Brain, are most numerous in the age-period 0–4, of the cervical glands in the age-period 10-14, of the skin in the period 10-19, and of the bones and joints in the age-period 5-14.

A summary of the notifications of cases of Pulmonary Tuberculosis received is given in the return to the Local Government Board (Table 5). In this table the notifications on Form B are of school cases.

From this return it appears that cases of Pulmonary Tuberculosis are notified in by far the largest numbers at the age-period 25-54 in males, in females at the age-period 25-44. The considerable number notified at school ages deserves careful attention, and is not due to the number of notifications received from the schools.

FORM C.

Phthisis (previously notified).

Males		Females	
Poor Law	Sanatoria	Poor Law	Sanatoria
319	183	88	99

TUBERCULOSIS (OTHER THAN PULMONARY).

Table 4.—Cases Visited and Registered during 1913.

Location of Disease	Age Groups																				Total		Manchester Township	North Manchester	South Manchester	Total
	0—		5—		10—		15—		20—		25—		35—		45—		55—		65—							
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
Brain—																										
Tumour	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1
Meninges	56	28	12	10	5	4	2	2	..	2	..	..	..	1	2	..	..	..	..	..	77	47	35	30	59	124
Hydrocephalus	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	1	2	3
Glands—																										
Cervical	20	18	51	38	44	61	17	36	16	16	9	9	7	3	3	4	1	2	3	..	171	187	91	80	187	358
Mesenteric	24	27	4	2	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	31	29	5	4	51	60
Axillary	..	1	1	1	..	2	..	..	..	1	1	1	..	..	..	..	..	..	..	..	2	6	2	2	4	8
Inguinal	..	..	..	..	2	1	..	..	..	..	..	..	1	..	..	..	..	1	1	..	4	2	3	..	3	6
Tuberculous Peritonitis	31	19	14	5	11	8	5	7	4	4	1	1	..	1	..	..	..	..	..	..	66	45	25	23	63	111
Tuberculosis of Abdomen	4	4	6	2	2	4	..	1	..	..	..	1	..	..	..	..	..	..	..	..	12	12	4	3	17	24
,, Mediastinum and Bronchitis	1	2	1	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4	1	2	5	8
,, Pleura	..	..	..	..	2	1	..	..	..	1	..	..	2	1	1	..	..	..	..	..	5	3	..	2	6	8
,, Breast	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	..	..	1
,, Intestines	12	4	..	1	1	..	1	..	..	..	..	1	..	..	1	..	..	..	..	..	15	6	5	5	11	21
Joints—																										
Spine	13	13	17	21	15	14	8	7	4	3	6	4	1	4	1	3	..	3	..	1	65	73	34	28	76	138
Hip	12	8	16	19	11	7	9	10	2	7	5	6	4	..	7	1	3	2	..	..	69	60	37	36	56	129
Elbow	..	..	2	1	3	2	3	..	..	..	2	..	1	..	1	2	..	..	..	..	12	5	4	5	8	17
Ankle	..	3	4	3	1	2	1	3	..	2	..	..	..	1	4	1	1	..	..	..	11	15	9	4	13	26
Wrist	..	..	..	1	2	..	1	..	1	1	1	..	1	..	3	..	1	..	..	..	10	2	5	2	5	12
Shoulder	..	..	..	1	..	1	..	..	..	..	..	..	2	..	1	..	1	..	..	..	4	2	2	1	3	6
Knee	3	5	2	7	10	7	4	4	3	2	3	1	..	4	1	3	..	5	1	..	27	38	14	18	33	65
Bones—																										
Various	8	6	7	11	12	8	6	11	6	5	5	5	5	1	1	1	4	2	1	1	55	51	31	30	45	106
Tuberculosis of Skin	1	..	7	11	15	10	12	16	8	6	6	11	2	13	1	9	2	4	1	9	55	89	33	36	75	144
General Tuberculosis	7	4	3	3	4	..	1	1	1	..	..	1	..	1	1	..	..	..	..	..	17	10	6	6	15	27
Special Organs—																										
Tuberculosis of Ear	1	3	..	1	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2	6	2	1	5	8
,, Nose	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	1	..	1	2
,, Bladder, etc.	..	..	..	..	..	..	..	..	1	1	1	1	2	..	1	..	..	..	..	..	5	2	1	3	3	7
,, Kidney	..	..	..	..	1	1	1	..	1	..	..	..	1	1	..	1	..	..	..	..	4	3	3	..	4	7
,, Testicle, etc.	1	..	..	..	..	..	..	..	2	..	1	..	..	..	1	..	..	..	1	..	6	..	1	1	4	6
,, Muscles, etc.	..	..	1	1	..	2	..	..	1	..	1	..	..	..	1	..	..	..	..	..	4	3	3	..	4	7
,, Pharynx, etc.	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	2	2
,, Rectum, etc.	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	3	..	2	..	1	3
Tuberculous Broncho-Pneumonia	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1
Totals	195	147	150	140	147	138	71	99	50	52	43	42	32	32	31	26	13	19	8	11	741	705	360	324	762	1,446

TABLE 5.

CITY OF MANCHESTER. 1913.

Age Periods	Primary Notifications (Form A)												Total Notifications (including cases previously notified)	Primary Notifications (Form B)			Total Notifications (including cases previously notified)	(Form C) Total Notifications (including cases previously notified)	
	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 +	Totals		0 to 5	5 to 10	10 to 15		Poor Law	Sanatoria
Pulmonary Males	10	64	128	71	97	121	283	266	170	109	25	1,344	1,911	5	2	7	16	327	194
,, Females	9	73	111	100	79	102	184	129	63	18	11	879	1,211	4	5	4	13	95	104
Non-Pulmonary Males	60	156	166	120	67	43	45	43	27	23	9	759	855	2	4	..	8	10	..
,, Females	39	136	138	140	90	40	58	28	22	13	9	713	776	2	4	1	9	7	5

Primary Notifications on Form C.

Poor Law.

Age Periods	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 +
Pulmonary Males	..	..	1	..	1	..	1	1	2	2	..
,, Females	..	..	1	1	1	1	2	..	1	..	..
Non-Pulmonary Males	..	..	1	..	..	..	..	1	..	..	..
,, Females	..	..	..	1	..	1	..	..	..	..	..

Tuberculosis (previously notified).

Males		Females	
Poor Law	Sanatoria	Poor Law	Sanatoria
8	..	5	3

Primary Notifications on Form C.

Sanatoria.

Age Periods	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 +
Pulmonary Males	..	..	1	3	2	1	1	2	..	1	..
,, Females	..	..	..	..	1	1	2	1	..	..	..
Non-Pulmonary Males	..	..	..	..	..	..	..	..	..	..	..
,, Females	..	..	..	1	..	..	1	..	..	..	..

The distribution of notifications and deaths in districts is shown on Table 6A, from which it will be seen that, as usual, the death-rate from Pulmonary Tuberculosis is by far the highest in the Manchester Township, and is higher in South than in North Manchester.

The notification rates follow the same order. These bear a higher proportion to the death-rate in North Manchester than they do in the Manchester Township and in South Manchester, and a somewhat higher proportion in South Manchester than in the Manchester Township. In South Manchester the highest death-rates occur in Hulme and Chorlton-upon-Medlock. But the notification rate is nearly as high in Ardwick and West Gorton as it is in these districts.

TABLE 6A.—TUBERCULOSIS (ALL FORMS).

	CASES NOTIFIED					DEATHS	DEATH-RATE	NOTIFICATION
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	TOTAL	1913	Per 1000 living	Rate per 1000
City of Manchester	**1324**	**997**	**745**	**884**	**3950**	**1439**	**1·93**	**5·32**
I. Manchester Township	369	238	186	226	1019	407	3·56	8·91
II. North Manchester	294	241	178	196	909	283	1·36	4·36
III. South Manchester	661	518	381	462	2022	749	1·78	4·81
I. Ancoats	129	79	72	86	366	132	3·23	8·95
I. Central	61	49	36	42	188	69	3·17	8·64
I. St. George's	179	110	78	98	465	206	3·98	8·99
II. Cheetham	80	68	39	39	226	54	1·22	5·10
II. Crumpsall	18	17	7	8	50	12	1·13	4·70
II. Blackley	11	10	6	6	33	13	0·88	2·25
II. Harpurhey	20	25	12	14	71	22	1·25	4·02
II. Moston	23	22	19	21	85	28	1·08	3·28
II. Newton	64	38	37	34	173	61	1·41	4·01
II. Bradford	51	29	38	35	153	49	1·89	3·55
II. Beswick	13	18	11	17	59	22	1·79	4·79
II. Clayton	14	14	9	22	59	22	1·55	4·18
III. Ardwick	69	63	55	63	250	71	1·76	6·19
III. Openshaw	69	52	30	37	188	49	1·53	5·84
III. West Gorton	72	44	31	39	186	52	1·90	6·79
III. Rusholme and Kirkmanshulme	41	48	28	32	149	61	1·42	3·46
III. Chorlton-upon-Medlock	99	81	79	116	375	159	2·87	6·77
III. Hulme	157	112	78	85	432	168	2·62	6·74
III. Moss Side	34	21	24	30	109	38	1·06	3·06
III. Withington	12	10	2	3	27	55	1·01	4·93
III. Gorton	75	68	38	48	229	72	1·59	5·06
III. Levenshulme	33	19	16	9	77	24	1·09	3·48

It will be seen that there is a discrepancy between the number of notified cases in Tables 3 and 5 for the year 1913, the number being 2,412 in the former, and 2,223 in the latter table. The former number includes cases discovered by Dr. Sutherland, but not formally notified.

There is also a discrepancy between the number of notified cases of Non-Pulmonary Tuberculosis in the return to the Local Government Board (1,472) and the number shown in Table 4, viz., 1,446. The latter number relates to cases visited and registered in 1913, and not to the number notified during the year.

The distribution of cases of other forms of Tuberculosis visited and registered in 1913 is shown in Table 6B, which may usefully be compared with Table 6A. It will be seen that there is a general accordance between the tables, but by no means a close one. The high incidence of other forms of Tuberculosis in Hulme is noteworthy.

TABLE 6B.

TUBERCULOSIS (OTHER FORMS)—CASES VISITED AND REGISTERED DURING 1913.

Statistical Divisions		
City of Manchester		1446
I. Manchester Township		359
II. North Manchester		324
III. South Manchester		763
I.	Ancoats	151
	Central	48
	St. George's	160
II.	Cheetham	58
	Crumpsall	28
	Blackley	8
	Harpurhey	22
	Moston	28
	Newton	74
	Bradford	54
	Beswick	27
	Clayton	25
III.	Ardwick	100
	Openshaw	83
	West Gorton	72
	Rusholme and Kirkmanshulme ..	46
	Chorlton-upon-Medlock	140
	Hulme	184
	Moss Side	27
	Withington	15
	Levenshulme	19
	Gorton	77

The following table shows particulars of cases of Tuberculosis notified from institutions during the year 1913. The principal contributions are from the Manchester and South Manchester Union Hospitals, the Royal Infirmary, Ancoats Hospital, the Out-patient Department of the Children's Hospital, and the Consumption Hospital :—

TABLE 7.

PARTICULARS OF ALL CASES OF TUBERCULOSIS NOTIFIED FROM INSTITUTIONS DURING THE YEAR 1913.

Institutions	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Manchester Union Workhouse	145	64	42	64	315
Chorlton Union Workhouse	107	66	65	76	314
Prestwich Union Workhouse.....	22	8	12	4	46
Poor-law Union Cases	12	10	10	7	39
Royal Infirmary	109	86	56	35	286
Ancoats Hospital	74	36	41	77	228
Chorlton-upon-Medlock Dispensary ...	2	1	1	...	4
Hulme Dispensary	6	1	4	4	15
Gartside Street Dispensary	135	69	33	41	278
Medical Mission, Red Bank	...	4	2	1	7
St. Mary's Hospital	3	38	7	58	106
Northern Hospital	47	21	24	8	100
Consumption Hospital	80	80	37	71	268
Southern Hospital	...	...	...	...	...
H.M. Prison	2	...	...	2	4
Jewish Hospital	4	1	2	1	8
Children's Hospital, Pendlebury	12	4	4	3	23
Various Sources	98	47	39	33	217
Total	858	536	379	485	2258
Private Practitioners	468	461	366	401	1696

No difference has occurred in the methods pursued in the Public Health Department of the work, except that the staff have had their time occupied to no small extent with details of treatment, chiefly for the reason that there has not been space in which to house the additional staff required. In consequence, the new work has fallen on the existing staff, and the Public Health work has suffered.

The histories of infection ascertained are summarised in Tables 8 and 9.

TABLE 8.

SOURCES OF INFECTION—PHTHISIS, 1913.

CASES OTHER THAN THOSE NOTIFIED FROM THE WORKHOUSES.

MOST PROBABLE SOURCE OF INFECTION	Likely 1902-1913	1913			
		Likely	Less Likely	Possible	Total
Father	513	99	40	2	141
Mother	336	54	20	..	74
Brother	429	61	23	..	84
Sister	344	52	15	..	67
Husband	175	23	9	..	32
Wife	86	16	10	..	26
Uncle	102	15	5	..	20
Aunt	69	8	2	..	10
Son	72	9	11	1	21
Daughter	55	..	1	..	1
Grandfather	21	3	5	..	8
Grandmother	10	3	3	..	6
Nephew	17	1	2	..	3
Niece	9	2	1	..	3
Father-in-law	7	3	..	..	3
Mother-in-law	10	1	..	..	1
Son-in-law	3	..	..	..	..
Brother-in-law	79	10	..	..	10
Sister-in-law	49	6	2	..	8
Cousin	69	6	7	..	13
Relatives	90	33	10	..	43
Companion	518†	54	80	1	135
Neighbour	216†	21	31	..	52
Tenant (Landlady, etc.)	29	1	2	..	3
Lodger, Fellow-lodger	89	7	14	..	21
Patients, Hospital, etc.	16	..	5	2	7
Employer	28†	1	5	..	6
Workfellow	499†	53	65	..	118
Workplace or Work	151†	..	343	..	343
Houses (including public-houses, etc.)	135†	..	148	..	148
Milk or Food	36	..	51	..	51
Army	14	..	1	..	1
Early Infection	2	2	48	..	50
Railway carriages	..	..	4	..	4
Schoolfellow	16	..	93	1	94
Monkey	1	..	..	..	..
Infected out of Manchester	..	..	..	..	57
Multiple sources	..	..	..	..	503
Insufficient information	..	..	..	..	71
Total	4295	544	1056	7	*1735

* This total does not include the 503 cases with Multiple Sources. † Eleven years.

TABLE 9.

SOURCES OF INFECTION—PHTHISIS, 1913.

CASES NOTIFIED FROM THE WORKHOUSES.

MOST PROBABLE SOURCE OF INFECTION	Likely 1902-1913	1913			
		Likely	Less Likely	Possible	Total
Father	93	6	3	..	9
Mother	98	5	4	..	9
Brother	125	5	6	..	11
Sister	83	5	2	..	7
Husband	99	2	..	..	2
Wife	90	6	2	..	8
Uncle	14	..	..	..	..
Aunt	8	..	..	..	..
Nephew and Niece	29	1	..	..	1
Son	37	1	..	..	1
Daughter	23	1	2	..	3
Step-brother	2	..	..	..	..
Father-in-law	9	..	..	..	..
Mother-in-law	1	..	..	..	..
Son-in-law	3	..	..	..	..
Brother-in-law	19	1	..	..	1
Sister-in-law	18	3	..	..	3
Cousin	10	1	..	..	1
Relatives	14	1	..	..	1
Carried forward	775	38	19	..	57

Cases Notified from the Workhouses—*continued.*

Most Probable Source of Infection	Likely 1902-1913	1913			
		Likely	Less Likely	Possible	Total
Brought forward.....	775	38	19	..	57
Companion	281†	8	8	..	16
Schoolfellow	4	..	7	..	7
Neighbour	51†	2	5	..	7
Tenant (Landlady, etc.)	26	1	..	..	1
Lodger and Fellow-lodger	64	3	4	..	7
Employer	6	..	..	..	..
Workfellow	140	3	3	..	6
Workplace or Work	98	..	25	..	25
Houses (including public-houses, etc.)	260	..	176	..	176
Army	37	..	..	..	..
Milk or Food	10	..	2	..	2
Clothing, &c.	..	..	..	..	..
Asylum, Workhouse, etc.....	36	1	7	..	8
Extension from Bone, etc., Disease	1	..	..	..	..
Infected out of Manchester ...	..	..	..	..	2
Insufficient information	..	..	..	..	103
Multiple Sources	..	..	..	..	192
Total.....	1789	56	256	..	417

* This total does not include the 192 cases with Multiple Sources.

† Eleven years.

Attention is directed to the great increase in the Public Health work carried out, as shown in Table 10.

TABLE 10.—STATISTICS RELATING TO THE NOTIFICATION OF PHTHISIS.

	1913	1912	1911	1910	1909	1908	1907	1906	1901 to 1905	1899 Sep. 1 to Dec. 31 1900	Tota
Cases Visited and Registered—											
Males	1543	1354	1090	958	1034	971	988	929	4286	1017	1417
Females	1052	993	717	571	567	529	600	464	2629	732	885
Totals ...	2595	2347	1807	1529	1601	1500	1588	1393	6915	1749	2302
Houses Disinfected—											
1. By Corporation—											
(*a*) With solution of chlorinated lime only	822	884	754	665	590	572	581	495	2801	581	874
(*b*) With lime solution only	0	0	0	0	0	0	0	0	17	109	12
(*c*) By Esmarch's method and solution of chlorinated lime	3044	2842	1983	1599	1419	1177	1106	1042	3020	0	17232
Totals ...	3866	3726	2737	2264	2009	1749	1687 (in 1556 houses)	1537 (in 1346 houses)	5838	690	26103
2. By Tenants— Esmarch's method	4050	3790	3342	3127	2690	3011 (in 1632 houses)	2860 (in 1627 houses)	2637 (in 1566 houses)	10113	1299	36919
Totals...	7916	7516	6079	5391	4699	4760	4547	4174	15951	1989	63022
Specimens of Sputum Examined:											
Positive	1165	1061	851	616	531	419	350	349	1259	104	6705
Negative	2637	1876	1403	1135	985	866	654	562	1904	154	12176
Totals ...	3802	2937	2254	1751	1516	1285	1004	911	3163	258	18881
Deaths—											
(*a*) Among total cases visited and registered	832	993	832	765	814	746	687	680	3095	653	10097
(*b*) Among all cases for Manchester (including those under *a*)	1056	1107	1116	1070	1115	1089	1082	1089	5404	1403	15531
Cases reported as sent to Hospital	* 2421	1874	1957	1772	2002	2225	1993	1541	5893	991	22669
Notified from common lodging-houses..	243	201	199	193	231	302	288	223	1042	187	3109
Number of cases under observation	4848	4305	3484	3105	2869	2572	2467	2278	7174	about 600	...

* This number includes all forms of tuberculosis.

4,877 special cases have been entered in the Business Book for investigation and cleansing after removal to hospital, change of residence, death, or under special circumstances.

772 letters have been sent to owners with reference to as many houses, with subsequent correspondence in many instances.

730 tenants (about 15·0 per cent. of the special cases) have allowed the removal of bedding, etc., for disinfection; or have themselves burned it in a few instances.

40,500 cardboard boxes have been prepared in the office and supplied to patients for spitting purposes in the home.

335 spit bottles have been supplied for use outside the house.

An effort has been made to ascertain the sources of infection in Non-Pulmonary cases of Tuberculosis, and the most probable sources are shown in Table II:—

TABLE II.

PROBABLE SOURCES OF INFECTION AMONG CASES OF TUBERCULOSIS (OTHER THAN PULMONARY) VISITED AND REGISTERED DURING 1913.

Probable Source	Number of Cases
Father	76
Mother	65
Parents	11
Brother	22
Sister	28
Husband	6
Wife	1
Son	2
Grandfather	4
Grandmother	5
Uncle	19
Aunt	19
Cousin	7
Relatives (various)	30
Landlady, etc.	2
Lodger	11
Servant	1
Companion	31
Workfellow	5
Work-place or Work	64
School	105
Milk—Food	173
Public-house—Lodging-house	35
Market	1
Asylum—Hospital	7
Convent—Homes	3
Neighbours	27
Inoculation	5
Midwife	1
Hotel	1
Early Infection	59
Infected outside Manchester	29
Source not ascertained	469
No information	122
Multiple sources, including Milk*	43
Do. excluding Milk*	151
	1,446

* The 194 "Multiple Sources" are not included in the above total.

PART 2—THE TREATMENT OF TUBERCULOSIS.

Important as the Public Health work is, as we have seen, in order to popularise it and recommend the measures carried out to the persons concerned, treatment must also be freely accorded. An immense accession to the means of treatment was provided by the National Insurance Act, 1911, which placed at the disposal of Local Insurance Committees the sum of 1s. 3d. per insured person for the provision of Sanatorium benefit to insured persons, and also provided that where this sum was inadequate the excess might by mutual consent be defrayed by the Treasury and the Local Authority.

In order to afford guidance as to the best manner in which the money might be expended, the Chancellor of the Exchequer appointed a Departmental Committee early in 1912. A report was issued by this Committee in the same year, setting forth the forms which treatment might most profitably take, and dividing treatment into Sanatorium, Hospital, Dispensary, and Domiciliary. It was contemplated that the Dispensary should be the central feature of the system, but considerable latitude was allowed, and more particularly it was contemplated that every use would be made of existing institutions.

A sum of £1,500,000 was provided under the Act and the Finance Act of the same year for the erection of Sanatoria and Dispensaries, three-fifths of the expenditure on new hospital buildings being defrayed out of this fund.

The Committee advised that the formation of schemes should be entrusted to the Sanitary Authorities of County and County Boroughs.

Accordingly a scheme was placed before the City Council, and accepted by them on February 19th, 1913. It was also approved by the Local Insurance Committee, and subsequently by the Local Government Board and the Insurance Commissioners.

In order to make clear what the scheme provides, it is necessary to mention one or two facts. Sanatorium benefit is entirely separated from treatment under the Poor Law. Prior to the adoption of the Manchester scheme the treatment accorded to cases of Tuberculosis in Manchester was given as follows :—399 beds for cases of Pulmonary Tuberculosis in the Union Hospitals ; about 50 beds in the Sanatoria of the Consumption Hospital, of which 20 were allocated to the Manchester Corporation ; 70 beds in Clayton Hospital for the treatment of advanced cases, including men, women, and children ; an average of about 70 beds for the treatment of Surgical Tuberculosis in voluntary institutions ; an estimated number of 40 beds for the expectant treatment of Tuberculosis in the Swinton School of the Education Authority ; besides an uncertain amount of other provision in various hospitals and institutions,

Name of Institution	Class of Cases Admitted	Position of the Institution	Subsoil	Average Height above Sea Level	Number of Beds			Staff				Extent of Site
					Males	Females	Children	Medical	Other Male	Nursing	Other Female	
Baguley Sanatorium	Adult cases of Tuberculosis, though it is hoped that when the Hospital is complete it may be possible to admit a few children	In a sparsely-populated district about 3 miles from Altrincham, in Cheshire	Clay and Shale	180 feet	Provided: 103	45	..	..	..	..	..	34 acres
					To be provided: 100	50	about ..					
					In course of construction							
Crossley Sanatorium	Adult males and females suffering from incipient Pulmonary Tuberculosis	Near Frodsham, Cheshire	Sand	500 feet	Provided: 44	18	..	..	..	..	..	71 acres
					To be provided: As at present							
Abergele Sanatorium	Adult males and females suffering from incipient Pulmonary Tuberculosis; but provision will probably be made here for children	At Abergele, in North Wales	Rock	300 feet	Provided: 36	10	..	..	..	..	..	278 acres
					To be provided: Not determined							
Clayton Vale Hospital	Adult males and females, and also children, suffering for the most part from Pulmonary Tuberculosis	On the banks of the Medlock, on the outskirts of the City – formerly the Smallpox Hospital	Clay and Sand	..	Provided: 19	22	27	..	..	..	..	5 acres
					To be provided: Will be disused							
					Total provided: 202	95	27					

The scheme finally passed made no immediate provision for children, purely on financial grounds. 300 beds will be available towards the end of the present year in Baguley Sanatorium, formerly a fever hospital, a corresponding additional provision being made at Monsall Hospital. 62 beds have been secured at the Crossley Sanatorium for the treatment of early cases of Tuberculosis of the Lung. The South Manchester Sanatorium at Abergele has been transferred to the City Council under an agreement with the Guardians for South Manchester to take all their incipient cases of Pulmonary Tuberculosis considered suitable by the Tuberculosis Officer. 46 beds have thus been rendered available for the treatment of early cases of Pulmonary Tuberculosis.

On the Estate at Abergele there is also provision for the treatment of 9 children suffering from Non-Pulmonary Tuberculosis, but this is at the disposal of the Guardians.

The Out-patient Department of the Consumption Hospital became the Dispensary under the scheme. The physicians of the institution were appointed consultants under the scheme at salaries of £250 per annum, and, under agreement, attend at certain hours at the Dispensary. It was understood that as posts at the Dispensary became vacant they would be filled up by whole-time Tuberculosis Officers appointed by the Corporation.

The Officers to be appointed by the Corporation were a Senior Tuberculosis Officer at a salary of £500 per annum, and three Assistant Officers. There is at the present time a vacancy on the Staff of the Consumption Hospital, and only two Assistant Tuberculosis Officers have as yet been appointed, at a salary of £300 per annum.

Eight nurses were to be appointed under the scheme, but, owing to exigencies of space, only two have as yet been appointed. It was contemplated that two clerks would act under the supervision of Mr. Lock, but give their whole time to keeping the records specially required by the scheme. It has become evident that this amount of clerical service will be insufficient.

It was not considered advisable to wait until the additional provision sanctioned by the Local Government Board at the Baguley Sanatorium was available, and accordingly the Hospital, otherwise very well equipped but short of dining-rooms, shelters, recreation-rooms, etc., was opened in October, 1912, and proved, in spite of drawbacks, a great boon to the cases admitted.

The provision available under the scheme may be set forth as follows :—

It may be considered that the provision made for female patients is comparatively inadequate. As a matter of fact, there is very much less pressure on the accommodation available for females than on that provided for males.

A very great amount of labour has been expended by the Sanitary Committee on the details connected with the negotiations, arranging of agreements, and details of equipment of the various institutions, and more especially by the Chairman of the Sanitary Committee, and by the Deputy-Chairman in his capacity of Chairman of the Hospitals Sub-Committee. The Finance Committee, the Town Clerk, and the City Architect have also given a very great amount of assistance, while the Authority are indebted to the Officials of the Local Government Board and to the Insurance Commissioners for much counsel and help.

At the present time the whole of the scheme is under weigh, and the more essential portions are approaching completion, including the provision of offices for the growing staff, new dining-rooms, and pavilions at Baguley Sanatorium.

It will be necessary, however, to make additional provision for the treatment of both adult cases of Tuberculosis of the Lungs and of children suffering from that disease, the more so that it is intended to abandon the use of Clayton Vale Hospital for the treatment of Tuberculosis.

The institutions named, and the Medical Officers appointed, have been approved by the Local Government Board. There is no point of difficulty outstanding excepting the treatment of sewage at Baguley Sanatorium. It would be an advantage to the Sanitary Committee if the Bucklow Rural District Council would provide a sewer for the Hospital.

Early in 1912 Dr. D. P. Sutherland was appointed Tuberculosis Officer in connection with the Public Health Service. At that time it was felt that insufficient medical attention was being directed to contacts with notified cases of Tuberculosis, and that the examination of contacts and suitable provision for these ought to be undertaken. When the scheme provided under the National Insurance Act was authorised, Dr. Sutherland was clearly marked out as Chief Tuberculosis Officer, the Medical Officer of Health being Administrative Medical Officer.

The brunt of the work has fallen on Dr. Sutherland, and, subsequently, also on the Assistant Tuberculosis Officers.

Under the agreement with the Board of the Consumption Hospital, the Dispensary is placed at the service of the Tuberculosis Officers in the afternoons, and contacts as well as other patients are seen by them. As regards the system of consultations with private practitioners, mapped out by the Local Government Board, this has only partially been carried out, but will, it is hoped, be rendered more complete in the future.

Too much stress cannot be laid on this part of the scheme.

Under the agreement with the Local Insurance Committee the 1s. 3d. is divided into two parts, 6d. to be allocated for Domiciliary treatment, and 9d. which is handed over to the Corporation to administer as part of the general expenditure, it being well understood that this sum does not nearly represent the expenditure on institutional and dispensary treatment, including in dispensary treatment the services of the Tuberculosis Officers.

The use of this money, however, is affected by important stipulations. One of these is that a portion of it will be expended in providing drugs for patients receiving Sanatorium benefit. This is likely to be a costly matter, and may amount to not less than £2,000 per annum. A sum of £500 is to be expended on providing food for Domiciliary cases and clothing for patients in destitute circumstances admitted into the Sanatoria. Also, £800 was set apart for the treatment of non-pulmonary cases of Tuberculosis admitted into the Royal Infirmary. Experience has shown that neither of these sums is adequate for the purpose, and an additional amount will be required for both. The fee of 5s. for Practitioners for filling up Form Med. 2 also comes out of this sum, amounting to £174 5s. for the year.

As regards the amount by which the total expenditure is estimated to exceed the sum provided by the Local Insurance Committee, by the well-known Hobhouse letter of the Chancellor this is to be defrayed in equal parts by the Treasury and the Local Authority, with the sanction of the Local Government Board, but on the understanding that the treatment of Tuberculosis under the scheme is extended to all persons suffering, an understanding which is welcome to the Sanitary Authority, but places upon it very heavy responsibilities, which can only gradually be fulfilled.

It is expressly determined by the contract between the Corporation and the Local Insurance Committee that the form of treatment allocated to patients is in every case to be determined by the Local Insurance Committee, under the advice of their responsible Medical Adviser.

The manner in which the machine works is set forth in Dr. Sutherland's statement, and does not need to be enlarged upon.

The most conspicuous drawbacks are these. Cases are not notified at a sufficiently early period of their disease. Partly this is owing to their failure to seek advice, partly to their not being notified so soon as they might be.

A second drawback is the reluctance of Practitioners to have their cases treated under Sanatorium benefit rather than under ordinary Medical benefit. The sum received is the same, but under Medical benefit the prescribed forms are not filled up. This retention of cases under ordinary Medical benefit is the result partly of pooling the sixpence which should go to Domiciliary Sanatorium benefit, partly of the Manchester system of payment by fees. These, like other drawbacks, however, will gradually yield to pressure, and, in fact, the returns of cases in receipt of Sanatorium benefit would appear to show that the majority of insured persons are now in receipt of Sanatorium benefit.

Dr. Newsholme has insisted throughout on the necessity of bringing the Public Health work and the Insurance work into close relationship, and we are as much impressed with this necessity. This being borne in mind, the Manchester scheme may be thus represented.

ADMINISTRATION OF INSTITUTIONAL TREATMENT.

The Sanitary Committee.

Chief Administrative Medical Officer.

Public Health Office :

Organising Clerk.
7 trained Enquiry Officers.
Part services of 28 Sanitary Inspectors and 18 Health Visitors.
8 subordinate Clerks.
Ambulance (Motor) Service.

Sanatorium Scheme.

Local Insurance Committee and Hospitals Sub-Committee.

Senior Tuberculosis Officer.
4 Consulting Physicians (one vacancy).
2 Assistant Tuberculosis Officers (not appointed).
2 Clerks.
2 Nurses (6 not yet appointed).

Chief Institutions.

Baguley Sanatorium	300 beds	
Abergele Sanatorium	46 „	(to be extended)
Crossley Sanatorium	62 „	
Clayton Vale Hospital	68 „	(temporary)
Surgical cases of Non-Pulmonary Tuberculosis, Royal Infirmary, about	9 „	

The Dispensary, Hardman Street.

Domiciliary Treatment.

The most recent return of cases in receipt of Sanatorium benefit is as follows.

Two Principles of Institutional Treatment.

When patients break down under an attack of Tuberculosis, there is a great danger that they will sink into despondency and inaction. This is usually unnecessary and hurtful to the patient and dangerous to those associated with him, as in this condition he is usually careless as to personal precautions. In hospital, therefore, it is of vital moment, if his condition permits, that he should be kept actively employed.

A system of graduated labour must be regarded as the mainstay of curative treatment, and every effort should, therefore, be directed towards the development and regulation of such a system.

But, in addition, it is necessary that, by careful planning, the whole time of patients should be fully occupied, and that, so far as possible, their time should be cheerfully and systematically occupied.

The second point of cardinal importance in treatment is that patients shall be systematically instructed and even drilled in carrying out personal precautions, and that in the same manner and with the same means which they will afterwards use at home, when discharged from the institution.

Unless this is done the patient will almost certainly lapse into careless habits at home. The drilling must be of such frequency and intensity that it becomes automatic to take the necessary precautions.

The drill in Manchester comprises these main points :—

1. To use a spit bottle out of doors. Printed directions for its use are issued.

2. To use a varnished or tarred cardboard box inside the home, which is to be burned within 24 hours of its first use.

3. To cough into a square of waxed tissue paper, which can be crumpled up and put into the pocket without soiling it. The same to be used for cleaning the mouth.

4. Even more important is the constant care of the hands, so that they may never come into contact with food in an infective condition.

Unless these two important parts of treatment are strenuously carried out, the institution is failing to fulfil either its curative or its preventive functions.

Reference is made to the reports of the Medical Superintendents of the Institutions for further details.

The following tables show the subsequent fate of Corporation patients treated in the Crossley Sanatorium and in Clayton Vale Hospital over a number of years. That the results are not better for the former institution is undoubtedly due to the fact that patients did not formerly come under treatment at a sufficiently early period of the disease.

TABLE 12.

DELAMERE SANATORIUM.

Males.

Year	No. of new cases	No. of re-admissions	Died in the Sanatorium	Died elsewhere	Lost sight of	Known to be still living, Dec. 31st, 1913
1905	16	1	0	10	3	3
1906	18	2	1	14	3	0
1907	29	2	1	20	3	5
1908	36	3	1	21	8	6
1909	27	4	2	13	9	3
1910	27	5	0	12	9	6
1911	38	2	0	12	7	19
1912	42	3	1	17	13	11
1913	151	2	0	5	14	132
Total	384	24	6	124	69	185

Females.

1905	14	0	1	8	4	1
1906	14	1	0	10	3	1
1907	16	2	0	14	1	1
1908	13	3	0	11	1	1
1909	16	1	0	10	2	4
1910	11	4	0	5	3	3
1911	18	2	0	9	2	7
1912	25	3	0	4	4	17
1913	68	0	0	0	13	55
Total	195	16	1	71	33	90

Table 13.

Clayton Hospital.

Males.

Year	No. of new cases	No. of re-admissions	Died in the Hospital	Died elsewhere	Lost sight of	Known to be still living Dec. 31st, 1913
1904	20	0	3	16	1	0
1905	25	2	8	14	3	0
1906	40	3	6	29	5	0
1907	30	2	9	16	4	1
1908	31	2	9	16	5	1
1909	22	3	4	11	4	3
1910	37	1	4	11	10	12
1911	54	4	8	13	17	16
1912	54	4	6	9	9	30
1913	44	4	7	2	2	33
Total	357	25	64	137	60	96

Females.

1905	20	0	6	11	1	2
1906	21	6	6	11	3	1
1907	27	4	9	12	4	2
1908	31	7	11	11	5	4
1909	24	3	14	7	1	2
1910	34	4	13	10	8	3
1911	88	5	14	20	20	34
1912	44	4	7	4	7	26
1913	65	5	18	4	6	37
Total	354	38	98	90	55	111

Description of the Routine of Work done under the Scheme.

I would refer to Dr. Sutherland's section. It must again be emphasised that the Public Health work is suffering heavily at present, owing to the requirements of the Clinical Section. For this there are, no doubt, compensations, inasmuch as under Dr. Sutherland's direction this work is directed largely towards preventive measures. It will be seen from his report that the nursing of patients at the request of Practitioners is at present carried on by the Manchester and Salford District Nursing Association. Admirable as is the work of this Association, it is desirable that the Medical Staff should be in direct association with the nurses, and that the work of the latter should be centrally directed. For this we await the opening of the New Offices in Hardman Street.

Aids to Diagnosis and Treatment.

Examination of sputum for the Dispensary and Institutions has been carried out partly at the Public Health Laboratory and partly at the Institutions.

On reference to Table 10 it will be seen that no fewer than 18,881 examinations of sputum were carried out during the year 1913.

The systematic examination of sputum is, of course, a useful addition to the other means of judging of the progress of cases. Special laboratories are being provided at Hardman Street and Baguley Sanatorium. At Abergele, Dr. Craig has fitted up a laboratory in which he does useful work. The Crossley Sanatorium also possesses a laboratory. Formerly the Opsonic index was taken, but reliance is now placed on easier methods of determining the condition of patients.

Dental Equipment.

A highly-qualified dentist is provided at the Dispensary, who examines all cases referred to him by the consultants, draws or fills teeth, and attends to the condition of the mouth generally.

The same services are given by a highly-qualified dentist, who visits Baguley Sanatorium once a fortnight. Systematic visits are also paid by a dentist to the Crossley Sanatorium. At Clayton Vale Hospital, Dr. Briercliffe personally attends to the teeth. So far no provision of dentures has been made. But there is no reluctance to make this provision, except the absence of provision in the estimates, and the fact that these appear likely to be overspent in various directions.

Finance of the Scheme.

In the report presented to the Council, it was estimated that the additional provision of 150 beds at Baguley Sanatorium and of 104 beds at Monsall Hospital, with the necessary equipment, would entail a capital expenditure of £53,145, while the purchase money and capital charges entailed by the transference of Abergele Sanatorium to the Corporation have amounted to £21,578, making a total of £74,723. Of this sum, £22,500 was estimated as the grant from the Local Government Board in respect of new buildings. A further capital expenditure of £430 was sanctioned for the erection and equipment of new offices, a laboratory, and X-ray rooms at the Dispensary. Net capital expenditure, £34,900.

The total annual expenditure estimated to be incurred at institutions, when the scheme was in full operation, was £21,087 at Baguley Sanatorium, £5,803 at the Crossley Sanatorium, £5,280 at the Abergele Sanatorium, and £800 at the Royal Infirmary, making a total of £32,890. It is, however, evident that the first and last items will be found insufficient. The Dispensary account

includes the payment of the salaries of all the Tuberculosis Medical Officers, of the current expenses of the Dispensary, of 8 Nurses, of 2 Clerks, rent, and travelling expenses, the total amounting to £6,714.

The Insurance and Public Health aspects of treatment are fully set forth in the final statement of the scheme, a copy of which may be obtained at the Public Health Office.

No mention is made in this statement of Clayton Vale Hospital, which has, however, been temporarily approved by the Local Government Board. The expenditure at this institution for 1913–14 was £5,375.

The total estimate for the current financial year on the Dispensary and Hospitals Account is £44,480. Deducting the estimated amount to be received from the Local Insurance Committee, viz., £9,175, we get £35,305, of which one-half will be received from the Treasury, leaving £17,652 10s. to be found by the Corporation. As a matter of fact, however, the amount required for drugs has been greatly underestimated, and the sum provided in the Estimates, viz., £19,305, will probably be required.

Further proposals will be presented later in the year, at all events in respect of the treatment of children.

In order to arrive at the total expenditure by the Corporation on Tuberculosis, we must add in the expenditure in 1913–14 on the Public Health Office, viz., £6,801, raising the expenditure of the Corporation to £26,106.

The amount spent by Government and by the Local Insurance Committee may be put at £33,652.

In addition, there are unknown amounts expended by the Education Committee, by voluntary institutions, and by the Poor Law, which may be estimated at a total of not less than £25,000.

It will be seen, therefore, that already over £84,000 is being spent per annum in Manchester in combating this disease.

The Subject of a Care Committee.

It will be remembered that the formation of a Care Committee was advised by the Departmental Committee, and subsequently by the Local Government Board. The depth of poverty into which many of the tuberculous patients and their families have fallen is dreadful, and is no doubt responsible in no

small degree for the spread of the disease. The Departmental Committee advocated the formation of a Voluntary Care Committee primarily to look after patients discharged from sanatoria and hospitals, to assist them, and see that they are placed under conditions favourable to the continuance of the progress which they have made in hospital, or at least favourable to the limitation of infection.

The Sanitary Committee, however, were of opinion that it would be hopeless to obtain adequate funds for such work from voluntary sources, and the City Council generously voted £1,500 for the current year to assist in raising the nutrition and sanitary conditions of families invaded by Tuberculosis. It has been determined that the Care Committee shall be a Sub-Committee of the Sanitary Committee, with four members of the Local Insurance Committee and co-opted members. It will deal primarily with two matters :—

1. The apportionment of the £500 allocated from the contribution of the Local Insurance Committee, and of the £1,500 granted by the Council.

2. The question of finding suitable employment for Tuberculous patients.

Bound up with this latter question is that of establishing a Tuberculous Colony, in extension of the hospital work, and of domiciliary treatment.

Successive reports on this subject have been presented, and the two last issued are appended to this statement.

In former Annual Reports the information obtained under the notification work as to the circumstances of patients has been analysed with a view to show the number of families and persons in whose case the income was below the standard of living given by Mr. Rowntree in his book on poverty, and also by how much the weekly income fell short. No doubt, in many instances, Sickness benefit has materially relieved the situation for a time. But the following return, while it shows that there is a shifting from the deeper to the less deep forms of poverty, shows also that there remains a vast amount of poverty in close association with this disease. It would be hopeless to attempt, at present, coping with those instances in which poverty was such that any sum likely to be voted by the Council would be speedily swallowed up, and, accordingly, assistance will be limited to those cases in which the amount of shortage does not exceed five shillings, and then only providing the requirements of the Care Committee and of the Tuberculosis Office are fully carried out. If any money remains over, assistance will be given to those families in which shortage does not exceed ten shillings.

Table 14.

Table Showing Particulars of Distress in Cases of Phthisis Notified during the Year 1913, Classified according to the Requirements of the Family in Excess of the Income. Food Calculated on the Atwater Scale. Household Sundries Calculated on Mr. Rowntree's Scale.

Shortage up to ..... in Shillings.

Conditions affecting Individual Cases	– 5	– 10	– 11	– 12	– 13	– 14	– 15	– 16	– 17	– 18	– 19	– 20	– 25	25+	Total
Alive December 31st, 1913	204	124	17	12	13	7	9	8	4	5	9	6	19	5	442
Dead December 31st, 1913	40	34	3	4	3	3	2	1	2	1	..	5	3	1	102
Removed to Union Hospital.. ..	35	32	6	3	..	2	2	1	2	1	4	4	8	1	101
Removed to Delamere Sanatorium	8	14	2	..	2	2	..	..	..	1	..	..	3	2	34
Removed to Bowdon	5	2	1	..	..	..	..	1	..	1	..	..	3	..	13
Removed to Clayton Hospital ..	7	4	..	..	1	2	..	..	..	..	..	..	1	..	15
Removed elsewhere..	45	33	4	6	1	1	4	2	1	1	1	2	4	..	105
Remained at home	144	73	7	7	12	3	5	5	3	2	4	5	3	3	276
Relief received..	1	13	3	1	4	1	1	1	2	..	5	3	9	1	45

Table 15.

Tuberculosis other than Pulmonary. From Cases Visited and Registered during 1913.

Showing Shortage in Income.

Circumstances affecting individual cases	Under 5/-	5/-	10/-	11/-	12/-	13/-	14/-	15/-	16/-	17/-	18/-	19/-	20/-	Total
Alive December 31st, 1913 ..	106	63	8	2	5	7	2	4	4	1	1	2	8	213
Dead December 31st, 1913 ..	26	7	2	1	..	..	..	..	..	..	1	..	1	38
Removed to Union Hospital ..	21	21	1	1	2	3	1	2	1	..	1	..	3	57
„ Pendlebury	3	1	..	..	..	..	..	..	..	..	..	..	1	5
„ other Hospitals ..	18	6	4	..	1	..	1	1	..	..	1	1	1	34
Remained at Home	90	42	5	2	2	4	..	1	3	1	..	1	4	155
Received Relief..	..	4	..	1	1	1	1	1	2	..	1	..	3	..

Agreements, etc.

Needless to say, the preparation of plans, adjustments, preparation of agreements, equipment of the hospitals, financial arrangements, etc., have entailed much work on all concerned. The Chairman of the Sanitary Committee, who is also Chairman of the Sanatorium Sub-Committee of the Local Insurance Committee, and the Chairman of the Hospitals Sub-Committee have been very heavily taxed, but others have also given much useful assistance. To Mr. Councillor Pierce in particular is due the credit of moving actively in the change from horse to motor ambulances, a change not only economical, but otherwise beneficial. Agreements have been prepared and sealed with the Local Insurance Committee for a term of 21 years, with the Board of the Consumption Hospital in respect of treatment at the Crossley Sanatorium for a term of 5 years, and for the use of the Dispensary at Hardman Street during the same period. Agreements have also been made with the physicians of the Consumption Hospital. When the Abergele Sanatorium was transferred, an agreement was entered into with the Board of Guardians for South Manchester, having special reference to the reception into a sanatorium of incipient cases of Tuberculosis of the Lungs recommended by them, and for the treatment of a limited number of non-pulmonary cases to be sent in by the Guardians.

The position in reference to the Scheme of Treatment of the Local Government Board.

It might be assumed that the large amount of assistance given by the Government would be accompanied by a corresponding measure of control. So far as the Insurance Commissioners are concerned, this control has been limited to their approval of the Local Authority's scheme and of the agreement with the Local Insurance Committee. The Local Government Board controls all matters relating to institutional treatment. They consider and approve (or otherwise) of the general scheme. In addition, their approval is required to all plans in respect of which a Government grant is asked or in respect of which it is sought to raise a loan. Medical appointments, whether of Tuberculosis Officers (Dispensary) or of the Medical Officers of institutions must be submitted to and approved by them. Their Inspectors visit and inspect institutions and records. They lay down conditions not merely for the institutions, but also for the regulation of Domiciliary Sanatorium benefit.

The Insurance Commissioners, also, have access to the records, and may require returns of all work done in connection with insured persons.

A special department of the Medical Staff at Whitehall deals with Tuberculosis, under the direction of the Chief Medical Officer; and not only is assistance given by the Secretaries, the Medical, and the Architectural Staff in the framing of individual schemes, but an active direction and supervision of the general work is maintained.

It would not be possible within a limited compass to give an account of the various memoranda of instruction issued by the Local Government Board. But it is desirable to indicate some salient features of them.

In February, 1912, the Medical Officer of the Board prepared a memorandum on administrative measures against Tuberculosis, in which he insisted on the inseparability of prevention and treatment. In his view the disease is spread even more through ignorance and carelessness than from poverty. He lays special stress on the detection of contact cases. As regards institutional treatment, he lays much emphasis on its educational value. After-care he regards as essential. Notifications are to be regarded as confidential.

In May and July, 1912, and again in December, 1912, the Board issued circular letters to Sanitary Authorities urging them to prepare schemes for the treatment of Tuberculosis in accordance with the recommendations of the Departmental Committee appointed to consider the administration of the moneys for the treatment of Tuberculosis provided by the National Insurance Act, and giving general directions for the preparation of such schemes.

In the circular of December 6th, 1912, they lay stress on the announcement that the Government grant of one-half of the expenditure on maintenance incurred by local authorities under authorised schemes, over and above the sums provided by the Insurance Act, will be conditional on treatment under the scheme being extended to the whole community.

In many cases such extension cannot, all at once, be undertaken. But that is the ultimate aim and condition of the Government grant.

By an Order of the Local Government Board dated December 19th, 1912, notification of all forms of Tuberculosis, clinically diagnosable, is made obligatory on the practitioner attending, and previous Orders are revoked.

Only one further observation need be made on this Order. By Article XVI., "Nothing in these regulations shall have effect so as to apply, or so as to authorise or require a Medical Officer of Health or a Local Authority, or any other person or authority, directly or indirectly, to put in force with respect to any person in relation to whom a notification in pursuance of these regulations has been transmitted to a Medical Officer of Health any enactment which renders the person, or any one in charge of the person, or any other person, liable to a penalty, or subjects the person to any restriction, prohibition, or disability affecting himself, or his employment, occupation, or means of livelihood, on the ground of his suffering from Tuberculosis."

It will probably be found necessary to modify this regulation as time goes on. Persons suffering from Tuberculosis and disabled from other means of employment have a special tendency to betake themselves to occupations connected with the preparation and sale of articles of food. Moreover, the regulation could be easily stretched to nullify the ordinary Public Health preventive measures.

By an Order dated July 26th, 1912, the Local Government Board issued regulations prescribing the conditions under which Medical Practitioners might carry out the Domiciliary treatment of insured persons suffering from Tuberculosis.

These regulations require the keeping by the practitioner of a continuous record on a schedule attached, which record must be submitted to the consulting officer at times agreed.

The practitioner is also to prepare and transmit to the consulting officer at intervals of not less than three months a report giving these particulars :—

(*a*) The progress of each patient.

(*b*) Whether the conditions under which the patient is living and receiving the treatment are satisfactory.

(*c*) The behaviour of the patient in carrying out instructions given to him.

(*d*) Whether, in the opinion of the Medical Practitioner, any form of institutional treatment has become desirable.

The Medical Practitioner is from time to time to inform the Medical Officer of Health of the Sanitary District in which the patient resides of any circumstances known to him which may affect adversely the sanitary conditions under which the patient is living, and in respect to which action by the Medical Officer of Health or of the Sanitary Authority would, in the opinion of the Medical Practitioner, be necessary or desirable.

Excellent as these requirements are, they have the tendency to keep the patient under Medical benefit rather than under Sanatorium benefit, although there is nothing in them which differentiates between the two forms of treatment of insured persons.

There does not appear to be any reason why this Order should not be extended to the Domiciliary treatment of Tuberculosis, whether the person suffering be or be not an insured person. At all events, it might be extended to the dependants of insured persons.

In February, 1913, a circular letter and memorandum were issued by the Local Government Board on the construction and arrangement of inexpensive buildings for Tuberculous patients. A revised and enlarged edition was issued in February, 1914, and the pavilions in course of erection at Baguley Sanatorium conform closely to the plans given in these memoranda.

The Insurance Commissioners have also issued a series of memoranda to Local Insurance Committees advising them as to their position in respect of the treatment of Tuberculosis, and in other matters.

These memoranda are numbered $\frac{102}{I.C.}$ July, 1912, $\frac{112}{I.C.}$ July 6th, 1912, and $\frac{142}{I.C.}$ April, 1913. Also Circular Med. 1, July 25th, 1912, which is accompanied by the forms required, viz., Med. 1 and Med. 4.

It seems unnecessary to go much into these memoranda. They are concerned largely with internal matters.

It does, however, appear necessary to point out that the provision of the National Insurance Act, 1911, requiring that in each case the Local Insurance Committee is to determine whether an insured person shall have Sanatorium benefit, and what form this is to take, is carefully safeguarded. Further, Local Insurance Committees are to be in some consultative relation with Local Authorities in matters affecting the expenditure of the money received from the Local Insurance Committee, $\frac{142}{I.C.}$

The position of the Local Insurance Committee is safeguarded by their agreement with the Corporation. They are to have four members attending the meetings of the Hospital Sub-Committee when any business affecting them is before the Sub-Committee. They have also a representative on the Board of the Consumption Hospital. In any fresh arrangements proposed affecting Sanatorium benefit, care will be taken that the Local Insurance Committee is properly represented. It is, in point of fact, an advantage that the relations of the Sanitary Authority with the Local Insurance Committee should be as close as possible.

The points which appear to call for special remark as regards the future are these :—

1. When the provision at Baguley Sanatorium is complete, it is probable that we shall be driven to consider the advisability of additional provision for advanced cases.

Will such provision take the form of segregation of advanced cases in a colony, or will it be more profitable to spend money on providing better home conditions, and in regulating home life ?

Both classes of provision may prove to be required.

2. The provision for the treatment of Tuberculosis in children, especially of Pulmonary Tuberculosis, is inadequate, and additional buildings will be required for this purpose. Any addition to the scheme must be arranged in association with the Education Committee.

3. The expenditure of money, whether on a colony or on after-care at home, to be of value will have to be surrounded with precautions and regulations. Any necessary staff should be provided.

4. It is desirable that the measures already devised, and the provision made, should be in full and successful working order, with a full equipment of officers, before any additions to the scheme are entered upon. That does not preclude, however, the consideration and approval of fresh proposals.

In conclusion, attention should be directed to the large amount of excellent work done by the Tuberculosis Officers, and also by Mr. Lock, to whom is due the preparation of the tables used in this analysis.

APPENDIX REPORTS.

1.—ON THE FORMATION OF A CARE COMMITTEE.

In his report for the year 1912-13, the Medical Officer to the Local Government Board advocates the formation of Care Committees, the formation of which was advised in the preliminary report of the Special Committee formed to give advice as to the modes in which Sanatorium Benefit should be administered.

Article xiii. (1) of the Public Health (Tuberculosis) Regulations, 1912 (December 19th, 1912), runs as follows :—

"A Local Authority, on the advice of their Medical Officer of Health, may supply all such medical or other assistance and all such facilities and articles as may reasonably be required for the detection of Tuberculosis, for preventing the spread of infection, and for removing conditions favourable to infection, and for that purpose may appoint such officers, do such acts, and make such arrangements as may be necessary.

"Provided that nothing in this sub-division of this Article shall be deemed to authorise a Local Authority to take any of the measures herein mentioned at any institution other than one belonging to the Local Authority."

The Special Committee and the Chief Medical Officer to the Local Government Board contemplate that the Care Committees to be formed will be voluntary. They are to be so constituted as to embrace a great variety of social interests. They are to provide visitors. Their work may be divided into two parts, one part being the finding of suitable employment for patients and giving advice as to how to prevent relapses, the other being the rendering of assistance to the patients and their families in various ways. The funds to be raised for such assistance are to be voluntary.

Such assistance is limited in its scope, but it is not limited to the patient, since it may extend to providing a larger house than the family is occupying, a provision which belongs at least as much to the preventive and public health as to the curative side of treatment. Indeed, the two are inextricably interwoven, and what defeats preventive work usually defeats also curative work. It is a matter of ordinary experience that when a person suffering from Tuberculosis of the Lungs is admitted into a Sanatorium there is usually, for a time, considerable improvement, and often, especially in less advanced cases, this improvement continues throughout the whole period of treatment. When, however, the patient returns home, his condition often alters for the worse. He is no longer on a strict rule of life. If he desires to carry out the Sanatorium rules, he finds himself at variance with the other members of the family. Above all, he cannot have the same food, or the same cooking, as he has had at the Sanatorium. Very often the means of the family do not enable them to purchase the necessary food. If the patient receives adequate nourishment, the other members of the family do not, and their badly-nourished bodies become more liable to infection. It is true the patient will have received instruction and training at the Sanatorium in the precautions which he must take to avoid being dangerous to others; but, as he gets weaker, he becomes less careful and more dangerous. Nevertheless, his period of treatment in the Sanatorium will, in general, have been a great boon to the family. If he is an insured person, this period has added 10s. or 7s. 6d. to the family weekly income, while the expense of maintaining him is withdrawn for a time. But if these are the facts when the patient has had treatment in a Sanatorium, how much worse must matters often be when he is treated at home all the time. In all probability he continues to get worse, and, lacking the discipline of the Sanatorium, he takes less care to avoid being a source of infection. During the continuance of Sickness Benefit the family are now much more frequently above subsistence level than they formerly were, while, after its cessation, they are as they have formerly been. That is to say, they are exposed to attack by this most insidious disease, with bodies weakened from lack of adequate nourishment. Tuberculosis is eminently a disease of the poor. What are the incidents of poverty which give to it exceptional power to infect?

They consist chiefly in lack of nourishment sufficient to *enable those exposed to attack to resist infection,* in overcrowding due to want of means to procure a sufficient amount of air space, and also, it must be admitted, in want of sufficient care in carrying out personal precautions. The last defect we endeavour, so far as lies in our power, to remedy ; but the first two we cannot, at present, deal with.

Tuberculosis of the Lungs, falling as it does most heavily on the bread-winner of the family, is a very serious cause of impoverishment, and, although the conditions of life attaching to poverty help greatly in causing Tuberculosis, it has been calculated that, to a still greater extent, Tuberculosis causes poverty, and all the misery and economic loss resulting. Nor should it be forgotten that many industrial conditions favour the transmission of the disease. When, owing to Tuberculosis of the Lungs in the breadwinner, or from other causes, there is deep poverty in the household, serious hindrance to the reduction of the disease arises. The breadwinner, as he cannot afford to be ill, closes his eyes to the fact that his strength is waning, and does not seek medical advice. Some improvement in this respect has certainly been produced by the Insurance Act ; but even when he is compelled to recognise that he is ill, and consults a medical practitioner, he is still reluctant to go to a Sanatorium so long as he can continue at work, or he may prefer to pass his enforced retirement from work at home under his medical attendant, hoping that he may recover sufficiently to resume work. But, generally, it is believed he remains at work as long as he can hold out, which he is enabled to do under domiciliary treatment, so that cases come to the knowledge of the Public Health Department at far too late a period of their illness. When a mother is ill, if she goes into a Sanatorium, not only are her maternal care and supervision lost to the household, but she has often, in addition, considerations other than purely economical keeping her at home. In many ways, then, the want of adequate means at home helps to maintain the spread and to increase the severity of Tuberculosis. With a view to obtain some measure of the extent to which this disabling degree of poverty exists in families, Mr. Lock has taken the level of subsistence given by Rowntree in his book on poverty, and has calculated out, year by year, the shortage of means in families as they came under inquiry (Appendix 1). Taking the year 1907, we find in the Annual Report for that year that there were 1,590 notified cases of Phthisis, of whom no fewer than 171 belonged to families whose incomes were below Mr. Rowntree's subsistence level. This is well over 10 per cent. ; but we may be sure that the proportion of families at this low point of subsistence is well over 20 per cent., since a large section of those notified do not belong to families at all.

The deficit per annum of these cases comes to £4,902, or, deducting sums given in relief, £4,317.

Inasmuch as by no means all cases were notified in 1907, the deficit must have been considerably over this sum. It is scarcely necessary to give the full list of 171 cases, but the particulars relating to the first ten are given to show the requirements of the families, and the amounts by which the income fell short of these requirements :—

Prog. No	Income	Rent	Food	House-hold Sundries	Shortage	Relief said to be received	Notes
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
D11/07	15 0	5 6	16 10	5 9	13 1	..	Patient taken to Clayton
17/07	17 0	7 0	17 1	6 2	13 3	..	Patient taken to Delamere and Clayton
19/07	15 8	4 3	10 10	4 5	3 10	..	Patient taken to Union Hospital
D27/07	15 0	4 6	17 10	6 8	14 0	..	....
47/07	7 0	5 6	16 1	6 1	20 8	9 0	Taken to Delamere and Clayton
D63/07	20 0	8 0	14 7	5 1	7 8	..	Taken to Bowdon
73/07	7 0	4 11	12 3	5 0	15 2	..	....
D79/07	36 11	6 6	28 0	9 3	6 10	..	Taken to Union Hospital
87/07	26 0	6 3	23 10	8 7	12 8	..	Removed ; lost sight of
D97/07	15 0	4 3	14 0	5 7	8 10	..	Went to Union Hospital

The facts are not recorded in other Annual Reports for Manchester in the same detail, but they are summarised, and the summaries show that the same conditions continue to prevail down to the present time.

A glance at these summaries will show that this is so.

	Shortage up to in Shillings. No. of Families.														Per Cen of Notifi Cases
Year	–5	–10	–11	–12	–13	–14	–15	–16	–17	–18	–19	–20	–25	–25	Total
1907..	33	54	5	12	7	4	6	11	3	9	7	1	13	5	170	10·69
1908..	23	37	12	7	6	12	6	6	13	10	4	4	11	9	160	10·65
1909..	144	104	15	23	17	17	18	10	14	17	10	9	33	19	450	28·00
1910..	146	126	11	14	8	17	9	15	12	17	14	7	43	13	452	27·24
1911..	177	123	15	15	21	18	19	6	12	12	21	6	42	6	493	26·84
1912..	207	131	14	24	13	21	16	11	10	11	13	7	35	10	523	21·76

The above figures are to be read in this manner :

In 1912 there were 523 new cases living at the period of the first visit by a Tuberculosis Inquiry Officer at a point below Rowntree's standard of subsistence, making 21·76 per cent. of all cases visited.

In 207 of these the shortage was from nothing up to 5s., in 131 from 5s. to 10s., in 14 from 10s. to 11s., and so on. It will be seen that there is, in this year, a shifting of the shortage to smaller sums, a change which will, no doubt, be found to have increased in 1913.

No imagination is required to realise the amount of distress experienced in families visited by Tuberculosis of the Lungs ; but what is not so manifest is the obstruction which this distress offers to administrative effort towards the reduction of infection. No doubt sickness benefit is a great alleviation of this distress, and would be a greater were it not that the efforts made on behalf of the Consumptive lengthen the duration of his disease, which lasts, perhaps, three years on an average, while sickness benefit, in this as in other diseases, lasts only six months. The figures for 1913 are given on page 98. The number of families in which shortage existed was 544, making 17·42 per cent. of all notified cases, and 28·97 of all newly notified cases. If, now, this deficiency could be made up from any source, on condition that the precautions considered necessary by the Public Health Authority were carried out, we should soon arrive at earlier diagnosis, earlier and more suitable treatment, and far more effective control of preventive measures. It has never been proposed, however, to assist families indiscriminately, but only those in which the necessary measures of precaution were strenuously carried out, and an improvement shown commensurate with the assistance given. The need for assisting these poverty-stricken families adequately under conditions such as to assist in the prevention of the disease has been urged in successive Annual Reports since the year 1906.

As a matter of fact, £500 has been put aside from the money handed over by the Insurance Committee for the purposes of supplying food in domiciliary cases when this need is apparent, and for supplying clothing to poverty-stricken parents removed to a Sanatorium, so that they may be able to respond adequately to treatment, and to appear decent amongst their fellows. The grant of food to patients receiving domiciliary treatment would be but a continuance of the grant made under the Samaritan Fund of the Consumption Hospitals to patients discharged from their Sanatoria, except that it would not be confined to patients who have received treatment in a Sanatorium. It is the experience of the Consumption Hospital Board that the grant of such assistance is indispensable in the case of many patients

if they are to maintain the progress which they have made. Equally indispensable is the grant of clothing to patients admitted into a Sanatorium under the Insurance Act, many of whom are very poor, and, in fact, it is manifest that the want of adequate clothing has been a serious deterrent to such patients from seeking such treatment.

It is doubtful whether the sum allocated to these purposes will suffice ; but it was not for this purpose alone that assistance was urged in the Medical Officer's Annual Report. When assistance is given to a patient in the way of food, it is doubtful whether it always goes to supply his needs, and whether other members of the family do not share. It is certain that, under the degree of penury revealed by our enquiries, the other members of families containing a phthisical person cannot be receiving the clothing and nourishment necessary to enable them to resist infection. Without adequate bedclothes or personal garments they cannot have the open window, which is preached as a necessary part of the struggle against the disease. Any decent man will struggle on as long as he can in face of such a prospect, and, even when struck down, he will often wish to remain at home in the hope that his illness will abate sufficiently to enable him to resume work.

To enable us to grapple successfully with the disease, more is required than we at present possess. It is needful that the family should, in its entirety, be sufficiently clothed and fed, and so housed as to secure a sufficient measure of isolation for every member. There is needed a Care Committee to administer such assistance as may be given.

There is, moreover, already a sum of £500 per annum provided, which is being used for the assistance of patients. During 1913 food was supplied to 115 patients for varying periods, and clothing was furnished to 73 in the Sanatoria. Any Care Committee appointed must, therefore, be semi-official. Moreover, assistance is not unconditional, and each patient assisted receives the following printed statement, which it is the duty of the visiting officers to see carried out. To be of lasting value, assistance must go hand in hand with control.

If assistance is given to families in the manner advocated, it should be given after careful enquiry by the Public Health Officers, and also, in suitable cases, by the Charity Organisation Society, and it should be given subject to a report that the conditions attached to it are carried out. As our object is to prevent infection, the minimum of such conditions would be that the food supplied was properly used, that adequate personal and bed clothing were in evidence, and that the house, as well as the belongings of members of the family, were kept in a proper condition. It would also be subject to the conditions that personal precautions are strictly observed, and that medical instructions as to treatment are thoroughly carried out.

These are official matters, and may be best dealt with by an official body.

In giving assistance, the extent to which such measures would be observed would form a necessary limitation. How much would be required it is impossible beforehand to say. The figures given in this statement show that, if all deficiencies were made good, £1,500 would not suffice; but a splendid addition to our means of preventing the spread of the disease would accrue from the judicious use of such a sum.

The Sanitary Committee have given consideration to the question how a Care Committee should be constituted. They have amongst their number the former Chairman of the Committee, who is Chairman of the Board of the Consumption Hospitals, and, in his opinion, as well as in that of other members, it would not be possible voluntarily to raise a sum at all adequate for the purpose contemplated.

On the other hand, in dealing with questions affecting employment there would, as pointed out by the Medical Officer to the Local Government Board, be an evident advantage in having various bodies interested in employment represented on the Committee. This could be secured by making the Care Committee a Sub-Committee of the Sanitary Committee, and co-opting upon it representatives of the interests concerned.

The question of employment is a most difficult one. It may be said that, generally, it is best for a tuberculous person to remain in the employment which he has pursued hitherto. He has learned that business. His mind and muscle are both attuned to it. Very few crafts can be easily taken up, and there is always strain in changing employment. Moreover, there is loss of wage, which is often of moment. Nevertheless, many patients cannot pursue heavy work without breaking down, while in other cases the employment hitherto pursued is of such a character as to irritate the lungs and so to cause a relapse. In still other cases, as, for example, in food-preparing or food-handling occupations, there comes a time when the continued pursuit of their avocation by patients must be regarded as dangerous to others. In fact, though the necessity for a change may be regarded as affecting a minority of cases, such cases are numerous, and the need for an effort to organise employment is very great.

If a workman, staying at home, keeps dropping off from his work from time to time, he stands in great danger of losing it altogether. In many cases restoration to working power may be secured under Sanatorium treatment, but only after six months or more. He is very liable to find his place filled up. Then all the trouble expended in rendering him fit is wasted. Finding nothing to do he becomes despondent and deteriorates. Unfortunate

gaps occur between one occupation and another. The organisation of employment for tuberculous patients is not going to be an easy matter, and it is not easy to see to what other occupation than their own previous one partially disabled tuberculous cases are to turn. Dr. Sutherland has, therefore, considered the census list of occupations, and has picked out the following as being those which Consumptives may take up ; but it will be seen that they are not equally suitable for all tuberculous persons, and, in fact, your Tuberculosis Officers would have to advise in each individual case as to the best occupation for that case :—

Occupations suitable for Discharged Cases of Tuberculosis of the Lungs.

Males.

Public Services :—

Waterworks—Watchman ; Inspectors.
Parks—Keepers and Attendants.
Tramways—Conductors ; Inspectors ; Drivers (limited).
Electricity—Inspectors.
Gas—Inspectors.
Art Gallery—Attendants and Porters.
Baths—Attendants and Porters.
Railways—Porters, Ticket Collectors, etc.
Postmen.
Messenger Boys.
Chauffeurs and Coachmen ; Carters.
Gardeners.
Gamekeepers.
Farm Hands and Bailiffs ; Drovers.
Office Caretakers.
Newspaper Sellers.
Bill Posters.
Advertising Agents.
Insurance Agents.
Commercial Travellers.
Lamplighters.
Boatmen—Canals and Rivers.
Shipbuilding.
Automatic Machine Fillers and Inspectors.
Carpentry.
Saddlery and Harness Makers.
Collectors.
Gate, Bridge, and Toll Keepers of Parks, Railways, Canals, and Roads.

Females.

Packers.
Typists.
Clerks (limited).
Service (limited).
Basket Making.
Gardening.
Hawking.
Photographic Retoucher.
„ Mounter.
Artificial Flower Making.
„ Fly Making.
Bonnet Making and Millinery.
Travellers and Advertising Agents.

All these occupations, both for males and females, would have to be subject to close supervision in regard to their suitability for individual cases; and the associated conditions, which so often render otherwise suitable work inadvisable, would require careful consideration.

It has been asked on what principles, and on what system would the money asked for be expended. The principles have been set forth in this statement.

Assistance would be given up to the limit necessary for a standard subsistence.

Such assistance would only be given after careful inquiry into each case by the Officers of the Tuberculosis Department, and also, when required, and, if possible, in every instance, by the Charity Organisation Society. It would be given subject to the conditions already set forth, viz.: All necessary measures of personal precaution to be rigorously carried out. The house and personal belongings to be kept scrupulously clean. Personal and bed clothing to be adequate for each member of the family. The food would be prescribed, and it would be necessary to give instructions, so that it should be properly cooked. Medical instructions to be thoroughly carried out.

It might be confidently anticipated that with such assistance, so safe-guarded, a rapid improvement would occur in respect of the incidence of Tuberculosis.

The official grant of assistance could either be made directly by the Tuberculosis Officer, the details of each case being subsequently laid before the Committee, or the details could first be placed before the Care Committee and their sanction obtained. The latter course entails the disadvantage, often a serious one, of delay. The period at which assistance is usually most needed is just after notification, when the persons who have been exposed to infection may be supposed to have the infection planted in their system, but to be still capable of resisting and arresting the disease, if properly cared for.

The functions proposed to be assigned to a Care Committee are thus mainly two: To organise employment for Tuberculous patients, and to distribute assistance both to patients and to families in intimate relationship with the Public Health work.

Each of these functions may be separately considered.

It may be possible to organise the procuring of lighter employments for Tuberculous patients without an After-Care Committee, so far as such organisation is practicable; but the giving of public assistance cannot possibly be administered without such a Committee being formed, to consider reports and sanction expenditure. If practicable, the assistance should come from the Corporation, as there is but little hope of the necessary money being obtained from voluntary subscriptions.

The Care Committee, if formed on the above basis, would be a Sub-Committee of the Sanitary Committee, having co-opted members.

Medical Officer of Health.

February 28th, 1914.

2.—FORMATION AND FUNCTIONS OF AN AFTER-CARE COMMITTEE.

The Medical Officer of Health would refer to his previous reports of September 23rd, 1913, October 22nd, 1913, and February 28th, 1914, in which is set forth the need for a Care Committee to administer the grants of assistance to be made to families invaded by Tuberculosis out of the £1,500 already sanctioned by the Council, and to deal with change of employment. In addition, the administration of the sum of £500 allocated from the £8,800 paid by the Local Insurance Committee to the Corporation to be expended on food for necessitous domiciliary cases of Tuberculosis, on clothing for necessitous patients admitted into Sanatorium, and, where practicable, in the provision of dentures, would also come under the Care Committee.

It has already been determined that the Care Committee should be a Sub-Committee of the Sanitary Committee, with four members co-opted from the Local Insurance Committee and with other co-opted members. At their meeting on June 9th the Hospitals Sub-Committee directed that the following Bodies should be asked to nominate co-opted members:—The Charity Organisation Society, the City League of Help, the Board of Guardians (one), the Education, Tramways, and Parks and Cemeteries Committees one each, and the Labour Bureau.

As regards the allocation of the £1,500 sanctioned by the Council to be expended during the current year, the primary object of this grant was to assist families invaded by Tuberculosis who are exposed to infection by reason of the deficiency of their incomes. These incomes will need to be carefully ascertained.

It is proposed that £1,000 be set aside for this object. It is certain, however, that this sum will not meet the whole of the deficiency, and it is suggested, therefore, that in the first instance assistance be limited to families whose income is not more than 5s. under subsistence level, as calculated on Rowntree's scale. Those families which are further under subsistence level, or appear to be so, will be referred to the Guardians for assistance.

Further, assistance should in general be given only in cases in which there is marked risk of infection, as determined by the examination of expectorations by the Tuberculosis Officers, and by the Records of the Office. It should be given, not as a result of application by the patients, but on the initiative of the Tuberculosis Department. There should be strict investigation of the family circumstances, and with every possible security that the family will take all precautions enjoined on them.

The amount and kind of food to be supplied should be calculated in each case, and purchase notes given. Inasmuch as these purchase notes will deal with a variety of foods, it will be necessary to have a list for each district of the different tradesmen who will supply food on the notes, including butchers, grocers, dairymen, greengrocers, fishmongers. In many cases simple cooking utensils will need to be supplied.

It will be remembered that a question came up of appointing a lady (known in St. Pancras as "the Pudding Lady") who would visit under instruction, and show the mothers how to make ordinary nutritious dishes, as, for example, how to make pea and lentil soups, how to make Welsh rarebit, macaroni and cheese, and so forth, and also how to serve food in an appetising manner.

It is suggested that cheap instructions in cooking should be supplied to mothers. These may be obtained at a charge of 2d. each.

It is also desirable that householders should know what articles of food give most value for the money, and a table of values should be printed and distributed.

Cooking stoves would be obtained from the Gas Department.

Clothing will be required in certain cases, and also bedclothes and bedsteads.

A certain number of bedsteads disused at Clayton Hospital are now being loaned out, but it will be desirable that at least 12 more should be available. It is not possible to insist on the open window in all weathers, unless adequate provision of bedclothes is made.

In a certain number of cases assistance will have to be given in aid of the rent of the house, and otherwise, so that a suitable house may be obtained. In some districts cheap shelters are provided, but there are few parts of Manchester in which this can be done. It is suggested by Dr. Sutherland that these could, in certain situations, be attached to bedroom windows, and external to them.

Such shelters would have to come out of the Tuberculosis Fund, in which case a contribution of one-half would be asked from the Local Government Board.

It is suggested, then, that the £1,500 be sub-divided into separate sums of £1,000, to be used in granting assistance for the provision of food, and in special cases of clothing; £150 to be expended in the provision of bedsteads and bedding; £150 towards rent; and £200 towards miscellaneous purposes not included in the above.

A separate account to be given in respect of each sum.

During the currency of assistance under any of the above heads, the family would be required to show that each member was sufficiently clad and fed, and that all necessary precautions were being carried out.

The staff of the Public Health Tuberculosis Office would be available to see that the conditions indicated were fulfilled. An additional clerk would be required.

Change of Employment.

A list of employments which might be considered by the Committee as being more suitable than those already pursued by Consumptives has already been furnished to the Committee.

It is not an easy matter to change an employment, at all events in the case of older patients. The nervous system and physical aptitudes are already established for each person, and it is more difficult than might appear for him to acquire the necessary skill and facility in a new employment, even if, at first sight, it appears better for him than that which he has hitherto pursued. The tendency is for the patient, after a brief trial, to throw up his new occupation, and either to return to his old occupation or decline to work at all. Nevertheless, it is necessary to do all that is possible to maintain the advance

gained by treatment, and, in certain cases, it is imperative that the occupation should be changed. Reference is made, therefore, to the list of occupations given in the statement of February 28th, 1914, showing the occupations which tuberculous patients might take up on discharge from a Sanatorium.

3.—QUESTION OF A COLONY.

Employment for Patients after Treatment in a Sanatorium.

One of the fundamental elements in Sanatorium treatment is to keep convalescent tuberculous patients in constant useful work. Their rest, play, and exercise should be carefully planned out, so that they are not permitted to drift about, but kept occupied during the whole day. Evidently the occupations to which they are put, and in which they are trained, should be such as will afterwards prove useful to them as far as practicable, and at the least they should be immediately useful to the institution.

Should workshops be erected ?

The answer to this question depends on the answer to others.

Are there, at any one time, a sufficient number of cases at the Sanatorium capable of being turned out in a condition to earn a good wage, and likely to remain so, in particular healthy occupations, such as market gardening, joinering, and carpentry. How far also would it be possible in the time, under competent instruction, to produce efficient joiners and carpenters from the material to be found in the Sanatorium ? In order to furnish an answer to this question a list of the occupations is appended, followed heretofore by the patients at present in Baguley Sanatorium.

One occupation, indeed, it should be possible to train the patients in to their immediate advantage, viz., that of market gardeners. The question arises whether this occupation will be useful, not only in the present but also in the future.

It is not likely that these patients would be able to compete in the open market with other market gardeners.

Moreover, another question presents itself. Would the Corporation be justified in placing such patients on the open labour market, without supervision of their work and produce ?

We are thus led further to consider whether it may not be necessary to create a colony of Tuberculous cases to be kept under observation, providing them with houses, land, implements, medical treatment, and supervision. It might, in that case, be possible to dispose of their produce as safely as if they were not Tuberculous. In fact, if only persons were employed whose

expectoration was free from tubercle bacilli, this might be done more safely. Such a colony could not be self-supporting, as it is not likely that the labour would have the same value as if the patients were not Tuberculous, and the cost of supervision would have to be added in. If a colony were to be created, however, it could not be confined to market gardeners. At least one shop would be wanted, and, even if the wants of the colony could be supplied in respect of other services, it might be advantageous to extend the colony so as to employ as many Consumptives as possible of other occupations.

In that case workshops for purposes of instruction would certainly be required at the Sanatorium.

Taking the instance of Baguley Sanatorium, the question would arise, where could such a colony be planted ?

The first requisites of a colony would be a supply of water and the treatment of sewage.

If, however, the kind of supervision aimed at were to be secured, it would be necessary to have the colony close to the Sanatorium. The position of the colony would, therefore, be determined by access to the water supply, and also by the proximity of a sewer. Water could, of course, be obtained, but it would hardly be feasible to establish a colony without access to a sewer.

It would thus probably be necessary for the Bucklow Rural District Council to satisfy the Local Government Board as regards the conditions necessary for the construction of a sewer.

Land would have to be procured for the erection of houses for market gardens and other purposes. This might not be so difficult in the first instance, when the colony was only starting, but would become increasingly expensive as it extended.

There would probably be local opposition.

Supposing such a colony established, it would be necessary that the supervision provided should be necessary not only for treatment, but also that the officer should be given ample power to send away patients who failed to do the amount of work which, in his opinion, could safely and with advantage be performed by the patient.

The case of Baguley has been specially considered, as that district offers some special facilities for the establishment of a colony, but the same principles apply throughout. Nowhere can patients be kept on in a colony without incurring considerable immediate expense, though such expense would be more than justified by the removal of infection from the community.

A statement by Dr. Sutherland on the establishment of such a colony is appended.

If the idea meets with favour, it would be necessary to prepare a scheme, and an estimate of the expenditure to be incurred. Such a statement would necessarily be vague, as the extent to which patients could be induced to remain would be indeterminate, while the extent to which families could be induced to settle at Baguley would be still more so.

The fresh proposals considered in this report are :—

(1) The appointment of a lady expert in cooking, who would go round to the houses of tuberculous families as directed, and give practical instructions in cookery. The salary of such a teacher should not be less than £150 per annum, and might, for the first year, come out of the £1,500, at the expense of one of the other items, but should by preference be additional.

(2) The issue of information about foods and diets.

(3) The issue of information about cheap dishes.

(4) The question of extending at Baguley Sanatorium by the erection of additional buildings to house tuberculous cases after treatment in the Sanatorium.

Medical Officer of Health.

June 18th, 1914.

STATEMENT BY Dr. D. P. SUTHERLAND.

Employment for Tuberculous Patients.

In any scheme that is to provide for the colonisation of the Tuberculous, provision will have to be made for medical treatment on a large scale. Patients, from the nature of the complaint, will be subject to frequent attacks of illness—*e.g.*, Pleurisy, Hæmorrhage, and Tuberculous Pneumonia—more especially the types for whom colonisation is most necessary—*i.e.*, the moderate and more advanced cases. For this reason, if any new colony is to be formed, it will involve provision of hospital accommodation to carry out the treatment most satisfactorily, and as such hospital accommodation already exists at Baguley, whilst the segregation is to be at first of an experimental nature, it would appear best to make the first provision in direct relation to that institution.

The provision of workshops and sheds which conform to ideal sanitary requirements are the first essential, and, for a commencement only, patients themselves should be admitted.

(The provision of houses and accommodation for families could follow later, and be a gradual growth, as might be found necessary to ensure the more complete segregation, and to make the scheme more readily acceptable to those affected.)

In cases that became non-infective, or in those who, after a sufficiently prolonged period of supervision and training gave evidence of being able to continue their own or an acquired occupation without danger to themselves or others, arrangements should be made for their establishment in the work under supervision outside, and for this purpose occupations should be found, if possible, under the municipality.

Other cases might be accepted by sufficiently enlightened private employers on a certificate issued from the Health Office that they were fit for their work, and stating definitely what that work should be. They would require, no doubt, assistance from the After-Care Committee, who would continue to advise and instruct them through the periodical visits paid by the officials appointed. Sanatorium cases, as at present understood, would provide the greatest number of these cases, but inasmuch as they form only a small proportion of the cases that come under notice at present, the position must be faced of providing for the more advanced ones.

Suitable occupations would include gardening, carpentry, basket-making, tailoring, bootmaking, bookbinding (see former lists), and for the work done some form of tangible recognition should be made to the patients. This would be of benefit in two ways. In the first place, the patient would receive recognition as a productive agent, and would be encouraged by the evidence that his work was of value. Secondly, it would definitely establish the economic value to the institution, and would, by that amount, diminish the actual cost of maintenance and treatment, against which, at present, there is nothing to show. Most patients would never become self-supporting, but whereas, as things are, they become a dead loss to the community through—

(*a*) Being absolutely unproductive when their disease has reached a certain stage ; and

(*b*) Requiring to be maintained and treated for the remainder of their lives, which are often prolonged by the treatment.

Under these conditions (*a*) might be indefinitely postponed in many cases, and a partial return for money expended could be anticipated.

In any event the patients would not, as at present, be forced by economic pressure to work amongst a healthy uninfected population until utterly disabled, and in a condition that makes for great danger to their associates and families.

It is not practicable to supervise the working conditions as they are to-day for these people in an infective state, and it is doubtful if, under private employment, such a condition will ever obtain.

The objection to establishing a colony in a large city is the impossibility of the best living condition obtaining, owing to air pollution, smoke, fog, and absence of sunlight. In addition, land is dearer, and opportunity for finding or establishing sufficient agricultural work would be difficult. Expansion of the colony would be limited, and the proximity of the town attractions might also have an undesirable and unsettling effect upon the colonists, and would tend to make the administration more difficult.

The opposition from without would also be great, and this should certainly receive consideration, though it would not by itself be any sufficient reason to condemn the scheme, and a more enlightened and sane view of the question of Tuberculosis is overdue from the laity ; but the other objection mentioned appears to point to the advisability of the formation of such colonies outside town areas.

(Signed) D. P. SUTHERLAND,
Tuberculosis Medical Officer.

June 20th, 1914.

THE SENIOR TUBERCULOSIS OFFICER'S REPORT

for 1912 and 1913.

In presenting a report upon the Clinical work done during the above period, I propose to give first a statement in reference to the methods adopted to provide treatment for cases of Tuberculosis in Manchester.

An analysis of actual cases, and the tables subsequently printed, will then have more value, as their significance will be clearer. A permanent scheme prepared by the Medical Officer of Health, on lines already laid down by him in his report of 1899, providing for treatment of the Tuberculous, was rendered necessary in consequence of the National Insurance Act, in order that the requirements of the Sanatorium Benefit Clauses could be fulfilled when the contract between the Manchester Corporation and the Manchester Insurance Committee was completed.

In giving a summary of the procedure involved, it will be convenient therefore to consider the case of an Insured person who is suffering from Tuberculosis, and for whom the Corporation undertake to provide treatment in accordance with their contract with the Insurance Committee.

The uninsured case involves a slightly different routine, though the main features remain the same, as will be seen subsequently.

When a notified insured case has been investigated, a consideration of the most advantageous form of treatment is necessary, and to provide this treatment the patient is given a form (Med. 1) upon which he makes his application to the Insurance Committee for Sanatorium Benefit. This form he may obtain from the Insurance Committee, the Tuberculosis Office, or

Hardman Street Dispensary, and, in addition, every Medical Practitioner has been provided with forms to give to any of his insured patients found to be suffering from Tuberculosis.

The patient's eligibility having been determined by the Committee, this form is sent to the Medical Adviser, who forwards a form (Med. 2) to the practitioner in charge of the case. Upon this is given briefly an indication of the patient's medical condition, and it is transmitted direct to the Medical Officer of Health, a payment of 5s. being made to the practitioner for filling it up. Should the patient be under treatment at the Dispensary, or be notified by one of the Tuberculosis Officers first, then this form is dispensed with. Forms Med. 1 and 2, together with the circumstances form, giving particulars of the family and home conditions of the patient, are then sent to the Physicians at Hardman Street Dispensary, or are dealt with by the Whole-time Officers of the Corporation.

In either case a consultation is arranged, and a full and detailed report, with chart, is made, together with a suggestion for treatment. These forms, constituting the beginnings of a dossier, together with the investigation form, now provide all the facts necessary for determining the type of treatment best adapted to the patient, and they are dealt with by the Senior Tuberculosis Officer, who makes out and signs a recommend on Form 4 for the Insurance Committee.

When this Form 4 has been countersigned by the Medical Officer of Health and the Chairman of the Insurance Committee, or Sanatorium Sub-Committee, treatment may be commenced at once, and the patient is advised accordingly by the Tuberculosis Office.

These cases are reported to the Insurance Committee, who deal with recommendations monthly at their meetings.

In cases that are to receive treatment at home, the Medical Practitioner is supplied with the necessary Progress Report Cards issued by the Local Government Board, and, in cases where he has not been present at the examination of the patient, with a summary of the Consultant's findings and advice in respect of treatment.

Cards have already been prepared and distributed to practitioners giving an outline of the suggested routine for the daily life of the patient under his care. A copy is given later as Appendices A and B.

A system of signs for recording the chest lesion has also been drawn up, and each practitioner is asked to make use of it.

In cases that require nursing, provision is made by the Corporation for payment to the District Nursing Association, who supply nurses at the request of the doctor.

Monthly (or more frequently if necessary) reports are made by Inspectors upon the home condition of all cases ; accounts are given of any other members of the family reported unwell ; the need for additional nourishment is also indicated ; and, in addition, details of the observance of instructions and precautions as far as these can be ascertained.

When the income is insufficient to enable a case under home treatment to receive proper nourishment, a grant of food is made when advisable, and the most suitable supplier in the vicinity of the case is given an order from the Tuberculosis Office for a definite amount and kind of food to be supplied for a stated time. This has been found to be of great assistance, and, given as it is only when conditions are satisfactory, and precautions and instructions being observed, helps the administrative work.

A case requiring dispensary care is referred to the Hardman Street Dispensary, and is put under the treatment of one of the Physicians of that Institution, or of one of the Tuberculosis Officers who attend in the afternoon.

Should Sanatorium treatment be best, the patient is sent to Delamere, the journey being made partly by train, the remainder of the distance to the Sanatorium being by the conveyance from the Institution. If the patient is recommended for Abergele he is sent there by motor ambulance.

Hospital cases, which are usually of a more severe type, are in all instances transferred to Baguley by motor ambulance, a nurse being in attendance.

Any case of Surgical Tuberculosis which requires operative treatment has a recommend made for the Manchester Royal Infirmary, and is paid for there at the rate of £2 2s. weekly, convalescence being arranged for on the same terms at the Barnes' Home, Cheadle.

When a bed at any Institution is not immediately available for a case recommended for such care, the patient's name is entered on the waiting list, and an alternative form of treatment is arranged for (either domiciliary or dispensary) until a vacancy occurs.

In such cases the medical man in charge of the case is communicated with a short time before it is proposed to send the patient away in case any change may have taken place that would necessitate a change in the projected arrangements.

As it is most frequent that such a change is one that renders the patient unfit for Delamere, all cases going to the Sanatorium are seen a second time by the Consultant if more than a week or two has elapsed since the first recommendation.

In every case under any form of treatment a report upon a special form is asked for at the termination of the period granted, and this report is attached to the dossier, and another recommendation for treatment is made.

As no period of treatment longer than three months can be granted without a fresh recommendation being made, every case comes before the Medical Adviser at reasonably short intervals, and a continuous medical history of every individual is thus obtainable. Under unfavourable circumstances, the periodical reports may not be sent, and this is due either to the patients refusing to attend regularly at the Dispensary or Surgery, or in some instances to delay on the part of practitioners in forwarding reports as requested.

These cases cause a great deal of unnecessary work and correspondence, and owing to the delay cases get out of their order, and the wished-for continuity is broken.

To meet this an instruction has been given recently that after the lapse of a reasonable time, two weeks actually, all cases must be referred again direct to a Consultant for a report if none has been obtained from a Practitioner, and in cases where the patient refuses to attend he is reported to the Committee after all means of securing his compliance with instructions have failed. The existing method of distributing the money intended for the domiciliary treatment of Tuberculosis, however, permits a patient under the above condition to continue to receive treatment of which no central record is kept, and although, as in all cases, he is under public health supervision, there is no means of obtaining efficient control, and the intention of the Act in this respect is negatived.

The periodical recommendations naturally vary both in type and duration, as the disease affects the patient little or much, and no possible routine can be adopted for this. Consequently, detailed consideration has to be given to every case every time a fresh recommendation is due, and a great deal of critical work, for which little is seen, has to be accomplished.

The following brief table illustrates the increase of this work during 1913, and as the number of cases under treatment steadily rises, so the work associated with them is constantly growing :—

	Cases Applying and considered	Cases Re-considered
First period—to December, 1912	51	3
Second period—to July, 1913	73	186
Third period—to December, 1913	80	286

Cases doing badly at home may require removal to hospital; other cases progressing favourably can be transferred from Institution to home or Dispensary care; while in instances in which recovery has occurred no treatment is necessary, and in these the monthly reports indicate the maintenance of health or the necessity for another period of supervision.

When a patient is sent into an Institution he is kept under observation for a few days, and then transferred to the class most suitable for his condition. These classes or grades are distinguished by the varying amount of exercise or work of which the members are capable, and for each patient a definite period of rest, exercise, and suitable occupation is indicated.

A book of rules and instructions and a daily time table are supplied to every case, and frequent lectures to the patients, pointing out in non-technical language the precautions that are to be observed and the measures that must be adopted to help towards recovery, supplement this advice.

When about to be discharged, patients receive further guidance in regard to their work, and the essential facts are repeated in order that they may maintain the improvement and avoid either infecting others or reinfecting themselves.

With uninsured cases all those requiring institutional treatment are dealt with by the Tuberculosis Officers, and, except that the cases are not reported to the Insurance Committee, the proceedings are those already described. A number of institutional cases are admitted to the Clayton Hospital, as also are many children suffering from Tuberculosis.

Other cases are referred to their own doctor, the Poor-law Hospitals, or any of the other centres of treatment that are most appropriate. The figures given later will indicate the extent to which this is done.

For these cases, at present no continuous clinical record is obtained, but a system of dossiers has been started for uninsured cases, and gradually, as the necessary staff is appointed, a similar method of record to that existing for the insured will be established. Two whole-time Assistant Tuberculosis Officers, Dr. R. Briercliffe and Dr. A. B. Porteous, were appointed on November 18th, 1913, and entered upon their duties soon afterwards. Their services have already been of great value in extending the amount of clinical work and records.

Treatment by the whole-time Officers commenced in February, 1914, at Hardman Street, where attendances are made on two afternoons a week; contact cases are seen and examined there, also at the Civic Buildings and in their homes.

At Baguley and Clayton a similar form of continuous record is in use for all cases, whilst at the dispensary there is one made specially suitable for the cases attending there.

At Delamere there is in use the same record that has been adopted by the staff for many years.

All these institutional and dispensary records are kept at the respective hospitals, and are subject to inspection at any time by the Medical Officer of Health and the Senior Tuberculosis Officer.

An outline of the clinical scheme having been given, attention may be directed to one or two points in particular. There is still a difficulty in obtaining early cases, and for the most part, as appears later, patients make their application much too late in the course of the disease for Sanatorium treatment, as distinguished from Hospital treatment, to be advisable.

The popular idea still is that all cases should have this treatment, but the results of Sanatoria, where unsuitable cases were admitted, have proved so bad in the past that it is recognised amongst all competent to judge that only incipient cases capable of permanent improvement should be sent.

The early recognition and notification of cases is essential if money spent upon this form of treatment is to have an adequate return in restored health and working capacity.

Generous accommodation for advanced cases will have to be provided to limit infectivity as far as possible in homes and workplaces ; the number of cases of advanced disease going to work is shown in the appended table to be very large, and these cases are potential sources of spread of the disease. Provision for them is at least as important as that for the early curable case. It is of interest to note in regard to the working capacity of patients that Tuberculosis of the Lungs does not always incapacitate to the degree that would be expected from the extent of the disease. Some of these cases manifest a subjective tolerance to the toxins without a corresponding immunity to the progressing destruction of tissue that goes on, and further work and observation are desirable to determine how much of this peculiarity is due to constitution, and how far variation in the strain of the invading organisms is responsible.

The following tables give an analysis of cases examined by me up to the end of 1913, and refer only to primary examinations. Cases that have been kept under observation have been re-examined at intervals of one, three, or six months, and in all this has accounted for a total of 2,081 examinations—788 visits, and 246 consultations with practitioners at the homes of patients or at the doctor's surgery.

Taking uninsured cases first, the following tabulation shows the number examined, the reason for examination, the stage of the disease, whether the patients were working or not when examined, the associated lesions, and the recommendation for treatment.

Where a case is suffering from two or more forms of disease, an entry is made in the columns appropriate to such disease ; one case may therefore appear in more than one column.

Public Health Cases—Uninsured.

	Reasons for Examination						Pulmonary Tuberculosis			Other forms of Tuberculosis									Recommendations							
	Institution Treatment	Claimed Recovery	Diagnosis	Contact	Working or at School	Not Working	Stage I.	Stage II.	Stage III.	Laryngeal	Bones and Joints	Glands	Abdominal	Bronchitis	Heart Lesions	Other Diseases	Doubtful Tuberculosis	No evidence of Tuberculosis	Delamere	Clayton	Baguley	Hardman Street	Union	Other Hospitals	Private Practitioners	Observation
Males	154	41	66	40	184	117	57	54	97	22	4	3	3	27	11	28	17	10	36	31	38	35	29	19	66	47
Females ..	178	32	89	79	253	125	81	89	115	14	4	9	5	48	19	24	13	21	24	52	63	57	22	29	106	25
Children ..	125	38	125	284	241	331	139	76	44	3	11	52	35	123	19	83	32	26	0	113	8	78	19	199	75	80
	457	111	280	403	678	573	277	219	256	39	19	64	43	198	49	135	62	57	60	196	109	170	70	247	247	152
	1,251				1,251		752												1,251							

The number of cases examined in whom other forms of Tuberculosis than Phthisis existed, and where no evidence of pulmonary disease was demonstrable, was 47. In the majority of tuberculous cases seen, lesions of the lungs were found in addition to the disease elsewhere.

The most frequent sources of difficulty in diagnosis, as evidenced by the fact that they occurred amongst cases notified to be suffering from Phthisis, were Bronchitis, Unresolved Pneumonia, Pneumonokoniosis, Cardiac Disease, Diseases of the Nose and Throat, Anæmia, and Dyspepsia. In addition to these, all the following conditions were responsible for mistaken diagnosis :—

Aortic Aneurysm.	Menopause.
Atheroma.	Nephritis.
Dentition.	Petit Mal.
Empyema.	Rickets.
Gastric Ulcer.	Sarcoma of Lung.
Gastric Carcinoma.	Syphilis of Lung.
Infarction of Lung.	Thyroid Adenoma.
Malnutrition.	Whooping Cough.

In respect of insured cases, the returns prepared for the Insurance Commissioners are given ; the number examined appears, and also the treatment provided and its results.

As will be seen, these returns are given in two groups, the first relating to cases applying before January, 1913, *i.e.*, in the first six months of the working of the Act and the second relating to the subsequent twelve months.

The stage of disease in those examined by me at their homes or at Civic Buildings is seen below. The remaining cases have been examined by the Consultants of the Consumption Hospital.

Insured Cases.

	Stage I.	Stage II.	Stage III.	Doubtful, or not Tuberculosis	Total
Males	29	46	91	10	176
Females	10	21	24	3	58
	39	67	115	13	234

Sanatorium Benefit Return.

Table I.—Showing the number of Insured Persons applying, medically examined, and recommended for Sanatorium Benefit during the period from 15th July, 1912, to 14th January, 1913, inclusive.

	Number of Applicants	Rejected on other grounds than those of health, e.g., applicant not insured	Examined	Recommended for Treatment	Received Treatment (a) Pulmonary Cases	Received Treatment (b) Non-Pulmonary Cases	Received Treatment (c) Total
	(1)	(2)	(3)	(4)	(5)		
Men	125	2	108	97	97	..	..
Women ..	51	1	49	45	45	..	..
Totals ..	176	3	157	142	142	..	..

N.B.—The number to be inserted in the first left-hand column is the number of insured persons who have actually applied for benefit within the period of the Return.

Remarks.

The difference in the figures between the various columns is accounted for thus :—

Column 2—3 cases rejected—2 men, 1 woman.

Men	Women	Total	
..	1	1	Not an Insured person.
2	..	2	Applicants entered Poor Law Institutions before medical examination or recommendation for treatment could be made.
2	1	3	

Columns 1 and 3—19 cases not examined—17 men, 2 women.

Men	Women	Total	
..	1	1	Not an Insured person.
2	..	2	Entered Poor Law Institutions before examination could be made.
2	..	2	Died before examination could be made.
13	1	14	Awaiting medical examination at 14th January, 1913.
17	2	19	

Columns 3 and 4—15 cases not recommended for treatment—11 men, 4 women.

Men	Women	Total	
1	1	2	Died before recommendation could be made.
10	3	13	Awaiting recommendation at 14th January, 1913.
11	4	15	

TABLE II.—Showing results in cases receiving Institutional Treatment during the period from July 15th, 1912, to January 14th, 1913, inclusive.

Results	Sanatorium			Hospital			Dispensary			Grand Total
	Men	Women	Total	Men	Women	Total	Men	Women	Total	
Discharged (including those transferred from one form of treatment to another):—										
(*a*) Fit for work	1	..	1	3	..	3	..	..	..	4
(*b*) Improved	..	..	..	..	..	..	1	..	1	1
(*c*) Without improvement	..	1	1	4	..	4	1	..	1	6
(*d*) Worse	..	..	..	..	..	..	..	..	..	..
Treatment discontinued for other than medical reasons	..	..	..	..	..	..	1	..	1	1
Died	..	..	..	3	..	3	..	..	..	3
Total cases in which treatment concluded	1	1	2	10	..	10	3	..	3	15
Add—Still under treatment 14th January, 1913	17	13	30	44	16	60	4	7	11	101
Total cases treated	18	14	32	54	16	70	7	7	14	116

TABLE III.—Showing results in cases receiving Domiciliary Treatment during the period from July 15th, 1912, to January 14th, 1913, inclusive.

Results	Men	Women	Total
Completed domiciliary treatment :—			
(*a*) Fit for work..	..	..	..
(*b*) Recommended for other forms of treatment	4	..	4
Treatment discontinued for other than medical reasons	2	..	2
Died	1	1	2
Total cases in which treatment concluded	7	1	8
Add—Still under treatment 14th January, 1913	4	1	5
Total cases treated	11	2	13

A person recommended more than once for the same form of treatment should be reckoned as one case, and will appear only once in respect of that form of treatment in the appropriate table ; a person recommended for two or more forms of treatment will, however, be reckoned as two or more cases, and will appear as a separate case under the appropriate head in respect of each form of treatment given.

SANATORIUM BENEFIT RETURN.

TABLE I.—Showing the number of Insured Persons applying, medically examined, and recommended for Sanatorium Benefit during the period from 15th January, 1913, to 11th January, 1914, inclusive.

	Number of Applicants	Rejected on other grounds than those of health, e g., applicant not insured	Examined	Recommended for Treatment	Received Treatment (*a*) Pulmonary Cases	Received Treatment (*b*) Non-Pulmonary Cases	Received Treatment (*c*) Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Men	674	7	618	601	591	4	595
Women ..	233	2	210	199	195	3	198
Totals ..	907	9	828	800	786	7	793

N.B.—The number to be inserted in the first left-hand column is the number of insured persons who have actually applied for benefit within the period of the Return.

Remarks.

The difference in the figures between the several columns is accounted for thus :—

Column 2—9 cases rejected—7 men, 2 women.

Men	Women	Total	
4	1	5	Resided outside area.
3	1	4	Not Insured persons.
7	2	9	

Columns 1 and 3—79 cases not examined—56 men, 23 women.

Men	Women	Total	
4	5	9	Resided in or removed to other areas.
3	1	4	Not Insured persons.
7	3	10	Died before examination could be made.
9	1	10	Entered Poor Law Institutions before examination could be made.
2	2	4	Letters received from applicants cancelling applications, stating they were well.
1	1	2	Refused to attend for examination.
30	10	40	Awaiting examination at 11th January, 1914.
56	23	79	

Columns 3 and 4—28 cases not recommended for treatment—17 men, 11 women.

Men	Women	Total	
3	..	3	Died before recommendation could be made.
5	4	9	On examination, not suffering from Tuberculosis.
9	7	16	Awaiting recommendation at 11th January, 1914.
17	11	28	

Columns 4 and 7—7 cases did not receive treatment—6 men, 1 woman.

Men	Women	Total	
4	..	4	Died before treatment could commence.
1	..	1	Entered Poor Law Institution.
1	1	2	Applicants cancelled applications, stating they were well.
6	1	7	

TABLE II.—Showing results in cases receiving Institutional Treatment during the period from January 15th, 1913, to January 11th, 1914, inclusive.

RESULTS	Sanatorium			Hospital			Dispensary			Grand Total
	Men	Women	Total	Men	Women	Total	Men	Women	Total	
Discharged (including those transferred from one form of treatment to another) :—										
(*a*) Fit for work	73	20	93	105	37	142	60	36	96	331
(*b*) Improved	32	27	59	64	25	89	29	9	38	186
(*c*) Without improvement	18	11	29	45	10	55	38	11	49	133
(*d*) Worse	3	..	3	24	7	31	7	2	9	43
Treatment discontinued for other than medical reasons	2	..	2	1	..	1	31	14	45	48
Died	..	..	..	32	16	48	4	..	4	52
Total cases in which treatment concluded	128	58	186	271	95	366	169	72	241	793
Add—Still under treatment 11th January, 1914	42	14	56	91	22	113	71	36	107	276
Total cases treated	170	72	242	362	117	479	240	108	348	1,069

TABLE III.—Showing results in cases receiving Domiciliary Treatment during the period from January 15th, 1913, to January 11th, 1914, inclusive.

Results	Men	Women	Total
Completed domiciliary treatment :—			
(*a*) Fit for work..	13	1	14
(*b*) Recommended for other forms of treatment	198	13	211
Treatment discontinued for other than medical reasons	39	12	51
Died	64	11	75
Total cases in which treatment concluded	314	37	351
Add—Still under treatment 11th January, 1914	128	59	187
**Add*—Still under consideration for further treatment	62	16	78
Total cases treated	504	112	616

A person recommended more than once for the same form of treatment should be reckoned as one case, and will appear only once in respect of that form of treatment in the appropriate table ; a person recommended for two or more forms of treatment will, however, be reckoned as two or more cases, and will appear as a separate case under the appropriate head in respect of each form of treatment given.

* Awaiting reports from Panel Practitioners.

Finally an extract from the figures provided for the Local Government Board is made, relating to the work at the Hardman Street Dispensary, and to patients receiving institutional treatment.

Attention may be drawn to the effect of the Manchester system in affecting the number of cases receiving treatment at the Dispensary.

In a total number of 967 insured cases examined, 696 received treatment ; whilst in 1,449 uninsured cases examined, the number receiving treatment was 1,418.

DISPENSARY RETURNS.

Number of persons examined				Number of persons treated				Number under treatment on March 31st, 1914		Number under observation on March 31st, 1914	
July 15th, 1912, to March 31st, 1913		April 1st, 1913, to March 31st, 1914		July 15th, 1912, to March 31st, 1913		April 1st, 1913, to March 31st, 1914					
Insured	Uninsured	Insured	Uninsured	Insured	Uninsured	Insured	Uninsured	Insured	Uninsured	Insured	Uninsured
254	531	713	918	203	519	493	899	212	619	42	124

Institutional Returns.

I Number of persons treated :—

(*a*) From July 15th, 1912, to March 31st, 1913—

1.	Number admitted	371
2.	„ discharged	217
3.	„ treated for whole period	30

(*b*) From April 1st, 1913, to March 31st, 1914—

1.	Number admitted	879
2.	„ discharged	787
3.	„ treated for whole period	19

II. Average duration of stay :—

Period (*a*)	102·56 days.
„ (*b*)	92·49 „

III. Number under treatment on March 31st, 1914 :—

Insured	Uninsured	Total
191 ..	126 ..	317

D. P. Sutherland.

APPENDIX A.

Domiciliary Case.

Not working but able to take exercise.

7—7-30.—Temperature and pulse.
Cup of hot milk or cocoa.
Rise.
Tepid sponge if patient considered able to stand it.
Wash and dress.

8—8-30.—Breakfast in warm room or extra garments if room cold.
Porridge with milk and syrup. Fish. Eggs. Bacon with eggs and plenty of fat. Bacon with toasted cheese. Bread and butter. Jam or marmalade. Tea or coffee, mostly milk.

9—10-30.—Exercise as ordered, including breathing exercises.

10-30.—Lunch if necessary—milk.

10-30—11-30.—Exercise or rest.

11-30—12.—Rest.

12—1.—Dinner.

Soups—Thick, made with dried peas, lentils, macaroni, rice, barley, and other vegetables, such as turnips, carrots, onions, cabbage, in addition to meat.

Meats—Beef, mutton, fish cooked in various ways, hot-pots and stews, cottage and potato pies, curries, dumplings.

Vegetables—Beans, peas, cabbage, cauliflower, sprouts, carrots, turnips, celery, onions, and other vegetables when obtainable, with white sauces made with milk and flour and butter where possible, potatoes cooked in fat or mashed with butter.

Sweets—Milk puddings, rice, tapioca, sago, boiled puddings, dumplings, fruit in pies or stewed, with milk or custard.

Bread and cheese, macaroni and cheese.

1—3.—Rest.

3—5.—Exercise

5-30—6.—Tea.

Tea with bread and butter, jam, marmalade, fish.

6-30—7.—Rest or exercise.

Temperature and pulse.

9—9-30.—Supper.

Milk. Tea or cocoa. Bread and milk. Hot-pot. Stews. Hash. Potato and meat pies. Tripe and onions stewed in milk.

Leisure.

10—10-30.—Bed, preceded by tepid sponge and change of clothes.

Your recovery depends very largely upon your own efforts. It is of the utmost importance that you follow out all instructions thoroughly, and observe in detail all precautions.

Food must be well cooked and of suitable nature; sufficient variety must be used to prevent the appetite failing through monotony in diet.

Cold and damp feet are to be avoided, and whenever the boots are wet through they must be changed, together with socks or stockings, at once. This is a very important precaution to take.

If under the routine advised by your doctor you are unable to keep sufficiently warm, report the fact to him immediately.

You should also report any other unusual symptom, however slight it may appear to you, such as failing appetite, inability to sleep or excessive drowsiness, shivering, increasing shortness of breath, bloodspitting, alteration in the nature or quantity of the expectoration, pain, headaches, faintness.

Unless specially ordered by the doctor, alcohol in any form should not be taken.

Excitement and excessive exercise are both very harmful, and causes producing them must be avoided. The exercise prescribed for you by your doctor must not be exceeded.

You are advised to avoid crowded buildings, public houses, theatres, picture palaces, etc., on account of the danger to yourself, through breathing impure air, and also that you may not be a source of danger to others.

With plenty of food, rest, and fresh air, your improvement will be marked if you follow the instructions.

APPENDIX B.

Domiciliary Case.

Working.

Temperature if necessary.
Rise.
Tepid sponge.
Wash and dress.
Cup of hot milk or cocoa. Breakfast if possible.

6—7.—Work.

8—8-30.—Breakfast.

Eggs. Fish. Bacon or ham with fat. Bread and butter. Jam. Marmalade. Tea or coffee, mostly milk.

8-30—9.—Work.

11.—Lunch if required—Hot milk. Cocoa. Soup.
Work.

12—1.—Dinner hour.

Soups—Thick, made with dried peas, lentils, macaroni, rice, barley, and other vegetables, such as turnips, carrots, onions, cabbage, in addition to meat.

Meats—Beef, mutton, fish cooked in various ways, hot-pots and stews, cottage and potato pies, curries, dumplings.

Vegetables—Beans, peas, cabbage, cauliflower, sprouts, carrots, turnips, celery, onions, and other vegetables when obtainable, with white sauces made with milk and flour and butter where possible, potatoes cooked in fat or mashed with butter.

Sweets—Milk puddings, rice, tapioca, sago, boiled puddings, dumplings, fruit in pies or stewed, with milk or custard.

Bread and cheese, macaroni and cheese.

If not able to come home, arrangements should be made for heating food which the patient has taken to his workplace. Suitable food in ready cooked form is preferable to food purchased at small shops.

Rest.

1—2.—Work resumed.

5-30—6.—Tea.

Milk. Tea or cocoa. Bread and milk. Hot-pot. Stews Hash. Potato and meat pies. Fish.

Leisure.

6-30—7.—Temperature.

9—9-30.—Supper.

Soup. Milk. Bread and cheese. Fish. Tripe stewed.

Leisure.

10—10-30.—Bed, preceded by tepid sponge and change of clothes.

The instruction and advice is repeated exactly as already given in Appendix A.

MILK AND TUBERCULOSIS.

(J. W. Brittlebank, M.R.C.V.S., D.V.S.M.)

I beg to submit my report on the work done during the year 1913.

Manchester Farms.

These number 116, and have on them 221 cowsheds.

The total number of cows kept within the City is about 1,800, the maximum accommodation being somewhat higher. One farm was demolished during the year, and another has temporarily ceased to be a dairy farm, the present tenant not being interested in dairying.

The inspection and supervision has been maintained as well as possible, but, with the increasing number of calls on my time, much of the inspection has to be done hurriedly, and the same personal and individual interest in each farm and individual as was possible is not now so easily maintained. It is an essential part of the success of supervision when work is carried on in the manner heretofore customary in our area—that is to say, where the duties of an inspecting officer are not restricted to merely the superficial inspection, or what might be termed police work—but concerns itself with a full and complete knowledge of all the conditions which affect the business.

Generally speaking, the process of retrogression referred to in my report of last year has been again evident. The general class of cows kept is not as satisfactory as it was, though in this statement it would not be fair to include the whole area, but it may be stated that, sharply drawn as the line is between the two classes that exist, the distinction is even clearer than it was between the better class of dairymen and his fellows in a somewhat lower grade. In those districts in which a comparatively high price is obtainable all the year round for the milk sold, there is no tendency, so far as I can see, to any lowering of the high standard established in the class of cattle kept, but where the rise in price of dairy cows has reduced the margin of profit in the less lucrative parts of the city there is a marked inferiority evident. This would not matter very much if it merely meant that young cows of a lower milking capacity were purchased. The tendency, however, is gradually to return to the conditions extant many years ago, when the custom was to purchase freely the older cows from the country. Only constant supervision and close relationship with those concerned can keep a check on this development, which, at the outset, took some years to eliminate.

I have had little fault to find with the general conditions of cleanliness. A sharp reprimand to those whose vigilance and attention is relaxed is found to be all that is necessary; and Inspector Greenup, the Inspector of Milkshops, has been able to render me very considerable assistance in watching the observance of the Manchester Regulations in regard to the cleanliness of the cowsheds and the cows.

The total number of visits paid to these city farms during the year was 414, and the number of inspections of cows was 8,302.

Two cows were found suffering from tuberculosis of the udder, and 19 cows that were not, in my opinion, satisfactory, were removed from the city herds.

The term "not satisfactory" does not necessarily mean that such cows are diseased, though generally such is the case.

Attention is not restricted to disease of the udder, and if at any time I detect an animal which is in my opinion suffering from some form of tuberculosis, the owner is at once advised to remove her, and in most cases the animal is slaughtered. I refer to such cases in particular as do not come within the restricted scope of the Tuberculosis Order; but it would be folly to allow them to remain, and in most cases the owners are only too willing to carry out my suggestions, as none of them want to keep a diseased cow if they know it.

The Manchester Milk Clauses.

No material change took place in the method of administration of these Clauses of the Manchester General Powers Act, 1899.

Tuberculous Milk.

During the year 596 samples of milk have been collected by the Food and Drugs Inspectors in connection with tuberculosis. Of this number, 571 were collected at the railway stations, and the remaining 25 from carts coming in by road. The number of farmers represented in the total is 486.

Of these 486 farmers, 293 reside in Cheshire, and 41 of them (13·99 per cent.) sent tuberculous milk; 95 live in Derbyshire, and 11 of them (11·58 per cent.) sent tuberculous milk; 54 live in Staffordshire, and 5 of them (9·26 per cent.) sent tuberculous milk; 34 live in Lancashire, and 2 of them (5·88 per cent.) sent tuberculous milk; 3 live in Shropshire, and 1 of them (33·33 per cent.) sent tuberculous milk; 5 live in Yorkshire, and 1 of them (20·00 per cent.) sent tuberculous milk; in addition, 1 each lives in Lincolnshire and Wales, and neither of these sent tuberculous milk.

The usual table showing the percentage of farmers found sending tuberculous milk from 1901 onwards is inserted, being completed to the end of the year 1913.

Table I.

Year	Number of farmers' milk tested during the year	Total number found to cause Tuberculosis in the experimental animal	Percentage of farmers sending Tuberculous milk	Percentage of farmers from EACH COUNTY whose milk was found to cause Tuberculosis.					
				Cheshire	Derbyshire	Staffordshire	Shropshire	Lancashire	Yorkshire
1901	272	27	9·9	10·46	9·23	8·00	10·00	...	...
1902	345	36	10·4	12·72	8·65	4·01	...	8·31	...
1903	329	45	13·6	14·76	9·58	15·15	40·00	...	...
1904	318	29	9·1	11·17	6·02	...	...	7·14	25·00
1905	565	47	8·3	10·26	6·00	6·38	...	2·98	12·50
1906	542	42	7·7	8·60	6·50	9·30	12·50	4·0	...
1907	562	38	6·76	7·71	4·48	6·94	12·50	3·70	...
1908	289	27	9·34	11·56	6·25	7·70	...	2·94	12·50
1909	535	31	5·79	4·80	7·47	8·57	11·11	3·33	...
1910	468	30	6·41	6·20	8·69	5·55	...	...	...
1911	494	51	10·32	11·11	2·5	12·12	100·0	12·20	50·00
1912	484	54	11·15	13·94	4·0	10·20	33·33	6·00	10·00
1913	486	60	12·51	13·99	11·58	9·26	33·33	5·88	20·00
Total..	5689	517	9·01	—	—	—	—	—	—

Reference to the above table will show that the percentage of farmers whose milk was examined, and were found to be sending tuberculous milk, was 12·51 per cent. This is the highest percentage reached since the work commenced, with the exception of the year 1903, when the figure was 13·6 per cent.

There has, in fact, been a rapid rise in the amount of diseased milk received since the year 1910. The figures are extremely unsatisfactory to all concerned, and no useful purpose will be served by attempting to discuss further the reasons for this rise. I went into the matter at some length last year, and can only say that if the reasons I then advanced for the increase are even partially correct there is no occasion to be surprised at the figures for the year 1913.

There are no signs of any special relaxation of vigilance among the farmers concerned ; there is, indeed, increased reason for vigilance, inasmuch as the Tuberculosis Order, 1913, was put into force on May 1st, 1913, requiring the notification by both veterinary practitioners and farmers themselves of animals suspected to be suffering from tuberculosis of the udder, or tuberculosis with emaciation.

The general character of the type of cases found by me is an additional corroboration of this fact, for the cases were practically all of an early character, presenting considerable difficulty to the diagnostician. The very absence of well-marked cases of tuberculosis of the udder is in itself evidence that the farmers are alert, for such cases must occur ; but they are undoubtedly removed as soon as the farmer even becomes suspicious, and there can be little doubt hat there has been a serious increase of tuberculosis among bovines, at any rate in those areas to which our activities are specially applied.

It is not probable that such an increase is likely to be permanent in character, but the incidence rate of this disease is liable to periodic oscillations, while the general conditions remain as they are.

There need be no serious alarm on the part of the consumer, as there can be no contradiction of the fact that the ascertained sources of infection are removed at a much earlier period than was formerly the case ; but a strong case can be made for a much wider extension of our operations than the area which we now find it possible to cover. I believe that if it were found expedient to treble the number of samples collected in a year, and to maintain this increase for a year or two, that we should soon commence to show a material improvement in the present state. The present work can only control a portion of the supply, and there is undoubtedly a considerable portion which temporarily entirely escapes supervision and inspection.

Many supposed that the action of the Tuberculosis Order, 1913, promulgated by the Board of Agriculture and Fisheries, would be additionally protective to the consumers of milk, but to those who have any close acquaintance with the practical issues, it will be recognised that such an Order as at present administered can afford little assistance in the protection of the consumers of milk.

I do not attack the Order in any way, for it is distinctly stated that it may be regarded as merely preliminary to more general measures for dealing with bovine tuberculosis, and it is extremely gratifying to see even a start made. The methods employed under the Milk Clauses are far more likely to afford a reasonable measure of protection, for it would be no exaggeration to say, after due consideration of their character, that, under the provisions of the

tuberculosis order, not more than two of the cases dealt with would have been found. There is no general inspection under the Order, and its machinery is not started working until some notification has been received.

It is well known that the majority of farmers will not notify if they can help it, their usual method being to dispose of any suspicious animal as soon as possible, instead of asking for the assistance of the authorities. Indeed, the notification clauses of this Order are bound to fail unless the amount of monetary compensation to be received is on such a high scale as will compensate the farmer, first for the loss of the animal condemned, and second for the official interference which may be expected.

Eight months' experience of the working of the Order shows, in the first place, that there is no uniformity of administration, and that the valuations made are so low that the amount receivable by the farmer is in most cases trifling, and discontent follows.

The great majority of animals slaughtered, after proof of the existence of tuberculosis in the udder, reveal extensive lesions of tuberculosis at post-mortem examination, no matter what the condition be before death, and the carcases are usually not fit for food. The result is that, in most of these cases, the amount payable to the farmer is in the neighbourhood of 30s., and this after visits from various officials.

Examination of the results of past experience in the payment of compensation show that only where the compensation paid is on a liberal basis, has any material measure of success been attained. If agriculturists were all public philanthropists the payment of small sums might suffice, but the main objects of their occupation being to make money, the result of parsimony is to promote a business which has been described in the trade as "dodging," and there is no question that both prior to the Order coming into force and since there has been an increased amount of surreptitious trading in "suspected" animals.

Everyone is not prepared to admit that the policy of non-contributory compensation is right, but, once having established the principle, an effort should be made to make the payments correspond to some extent to the loss sustained, and to avoid, as far as is possible, the infliction of hardship. The administration need not be weak ; indeed, the firmer it is the better, compatible with fairness to all concerned.

Tuberculosis, with all its attendant difficulties of diagnosis, is a disease requiring special treatment from an administrative point of view, and the main object should be, and no doubt is, to educate all concerned to a proper recognition of the pathology of the disease. Whereas up to the present the County Councils responsible, recognising that the Order has to be administered,

appear to have made up their minds to carry out their responsibilities in as limited a manner as possible, and with a minimum of expenditure. However small the expenditure may be under such conditions, the money is wasted, and those most intimately concerned derive no benefit.

Instead, therefore, of relying upon the receipt of an infinitesimal number of notifications dealing with specific cases, and being content when these cases are dealt with, the authorities responsible should have power to proceed to find the cases, as far as possible—

(1) By periodical inspection of all dairy cattle by independent veterinary surgeons.

(2) By proper bacteriological examination of the mixed milk from dairy farms, such as is carried out under the Milk Clauses.

A combination of the two methods would undoubtedly be the most valuable.

The subsequent procedure is, then, of the highest importance, the removal of the active sources of infection being merely a preliminary step, and should have for its definite object the improvement of the general sanitary conditions of the farms, and the development of methods which would have for their object the destruction at regular intervals of all accumulated foci of infection. Above all, drastic measures are needed for improvement of the conditions under which young bovines are reared, and in this direction lies the greatest hope of improvement.

I have been tempted to refer to these matters, because my years of experience have demonstrated that there is an enormous wastage going on from disease which is, to a large extent, preventible, for the conditions which foster the development of tuberculosis are precisely those which are favourable to the propagation of other diseases, the accumulated effects of which are difficult to estimate.

No extensive alterations of the legislative measures available are necessary, all that is required is a proper appreciation and recognition of the principles of preventive medicine and their scientific application.

I do not advocate the immediate imposition of specially drastic measures, which would probably include the general tuberculin testing of all cattle, followed by the removal of re-acting animals. In the present state of affairs the resulting decimation of herds would produce such a dislocation of trade as is impossible to contemplate with equanimity, but there is no reason why a constructive policy should not be initiated, having for its object the gradual building up of herds in whom the risks of the development of Tuberculosis

could be reduced to a minimum, and its final eradication brought within measurable distance. Such a policy, properly initiated, would command the respect of all agriculturists, whose sympathy is necessary to the success of any such scheme.

So far as the work done under the Manchester Milk Clauses is concerned, certain difficulties of an administrative character arose on the Tuberculosis Order coming into force, due chiefly to discrepancies arising in the bacteriological results arrived at in the examination of milk, for, so far as the bacteriological work done under the milk Clauses is concerned, no step is left unturned to arrive at definite results. Whereas in the work done under the Order simple microscopic examinations are mainly relied upon, with the result that in many cases cows proved to be suffering from tuberculosis of the udder, by the injection into guinea pigs of milk obtained from such animals, were reported by the officers of the County Councils as not so suffering, as tubercle bacilli had not been discovered by the examination of the centrifuged sediment by the microscope. This difficulty has now been removed, as a working arrangement has been entered into with the parties concerned, whereby on being supplied with a copy of the bacteriological report received from Professor Delépine and a certificate from me to the effect that a certain cow is suffering from tuberculosis of the udder, the Chief Constable concerned is able to order the slaughter of such animal without delay, and unnecessary duplication of the work is avoided.

This arrangement has been found to work fairly well, and I have to place on record my appreciation of the way in which many of the veterinary and police officers concerned have facilitated the arrangements for my attendance at the post-mortems on behalf of my authority.

During the year 48 cows were found suffering from tuberculosis of the udder, and of these 45 were slaughtered.

Of these the carcases of 7 were passed as fit for food, of 3 as partially fit, and the remaining 35 were condemned as unfit for food.

Nine notifications were received during the year, and in only one case was the subject of notification found to be suffering from Tuberculosis of the Udder. As stated earlier, the section of the Milk Clauses requiring notification is practically valueless for the purpose it was framed. There is little doubt that in these cases the farmers who notify, only do so as an excuse to get me to examine the remainder of the herd.

In two cases farmers were summoned to appear before the Sanitary Committee to show cause why an Order should not be made on them, prohibiting them from supplying milk into the City, and in both cases such Orders were made.

In one case the Order was made, but its operation held in abeyance until such time as the general sanitary conditions of the farm were altered and there was a material improvement in the conditions of cleanliness. The farm buildings were altered, the general state of the farm supervision much improved, and the Order was in consequence cancelled.

In the second case, the order was made in consequence of two cows which had been proved to be suffering from tuberculosis of the udder not being removed. The examination of the milk of these cows under the Tuberculosis Order, by simple microscopic methods, failed to discover tubercle bacilli, and the farmer contended that the cows were not suffering from tuberculosis of the udder. During the period these cows were dry the milk supply remained free from infection, but on their re-introduction to the herd, subsequent to calving, the mixed milk was again found to cause tuberculosis. The farmer was then summoned to appear, and the prohibitionary Order was made.

The farmer then sent his milk into one of the suburbs just outside the City boundaries.

The total number of visits to country farms during the year was 108, and the total number of cows examined 3,288, housed in 278 cowsheds.

From the particulars supplied by the farmers, 365 of whom replied to our queries, we find that on these farms there were 6,842 cows, or an average of 18·74 cows per farm. An average of the gross figures will show that the milk of close on 10,000 cows was tested during the year.

The work done by Dr. Meredith Young, the Medical Officer of Health for the County of Chester, in securing some improvement in the conditions of housing for cattle, is again worthy of mention. I have personally been indebted to him for assistance on more than one occasion.

Tuberculin Test.

The table attached will show the successful manner in which the work of keeping a herd free from tuberculosis is being carried on. The milk produced by this herd is supplied to Monsall Fever Hospital, Clayton Hospital, and the Baguley Sanatorium.

The time has now arrived when the number of home-reared stock is nearly sufficient in number to render the herd entirely self-supporting if necessary.

It has been clearly demonstrated that young stock can be reared and brought to maturity free from tuberculosis. No animal reared under the conditions laid down at the outset has failed to pass the tuberculin test.

Much of the credit for a notable piece of work is due to Mr. F. T. Walley, the farmer concerned, whose ready co-operation has at all times been of the greatest assistance.

J. W. Brittlebank, M.R.C.V.S., D.V.S.M.

TABLE I.

Below is presented a table showing the actual results of each application of the test:—

Date of Test	Total Number Tested	MILKING HERD. Animals having been previously tested				PROBATIONARY ANIMALS. Animals not previously tested, but purchased subject to passing the test				Total Number of Animals Passing Test
		Number Tested	Number Re-acting	Number Passed	Doubtful Re-actions	Number Tested	Number Re-acting	Number Passed	Doubtful Re-actions	
October, 1904.....	103	85	0	84	*1	18	4	13	1	97
April, 1905.....	102	87	0	87	0	15	4	11	0	98
October, 1905	98	84	0	84	0	14	5	9	0	93
April, 1906.....	107	91	0	91	0	16	6	10	0	101
October, 1906	102	73	1	72	0	28	7	21	0	94
April, 1907.....	132	95	0	95	0	27	19	8	0	103
October, 1907	119	81	0	81	0	28	13	15	0	96
April, 1908.....	122	88	0	88	0	33	25	8	0	96
October, 1908	123	91	1	90	0	32	16	16	0	107
April, 1909.....	119	88	2	86	1	31	15	16	0	101
October, 1909.....	115	93	0	93	0	22	14	8	0	107
April, 1910.....	104	87	0	87	0	14	8	6	0	93
October, 1910	107	91	1	90	0	16	9	7	0	98
April, 1911.....	102	83	1	82	0	19	8	11	0	94
November, 1911.....	122	85	1	84	0	37	34	3	0	88
April, 1912.....	110	89	0	89	0	21	12	9	0	101
November, 1912.....	91	89	1	88	0	43	39	4	0	128
April, 1913.....	113	93	1	92	0	20	7	13	0	105
October, 1913	102	93	1	92	0	9	4	5	0	97

* Animal tested, but developed Bronchitis during test.

The following table of samples submitted in connection with the Manchester Milk Clauses summarises the work of the year :—

TABLE II. 1913.

Number of specimens of mixed milk taken at the station	571		
Number of specimens of mixed milk elsewhere	25		
Number of each found to contain tubercular infection	Station 59	Elsewhere 2	In addition, 16 control samples were taken at the stations and elsewhere, of which 5 were proved capable of causing tuberculosis.
Number of farms visited in consequence	108		Including 9 visited as result of notification or otherwise. Total visits 61.
Number of specimens taken from individual cows as result of following up station and other samples	117		And 11 mixed samples
Number of milks from individual cows proved to be tuberculous out of those given in the preceding column	46		And 3 mixed samples.
Number of udders proved to contain tuberculous lesions	45		
Number of milks taken from individual cows as the result of *notification* or *otherwise* than owing to the presence of tubercle bacilli in mixed milk	...		
Number of udders in last column shown to be tuberculous by bacteriological examination	...		
Total number of specimens submitted for examination	724		

INSPECTION OF MILKSHOPS.

The daily milk supply of the people of Manchester is obtained to a large extent from small retail shops, which are often overstocked with other goods, such as groceries, hardware, sweets, tobacco, and so forth. The work of inspection has been carried out by Mr. Greenup, and supervised by Dr. McClure. Many of the shops where milk is sold are unsatisfactory. It is, however, impossible to deal summarily with all such premises, and the policy adopted has been to insist upon cleanliness and the covering of milk vessels, and to gradually weed out those shops which are structurally defective. In this way considerable progress has been made, and the standard of suitability is slowly but certainly being raised. The sale of milk and greengroceries from the same shop is forbidden, and a prosecution in a case of this kind during the year was successful. The following figures relate to the work done by Mr. Greenup during 1913. Recently a second Inspector of Milkshops has been appointed, to give his whole time to the work.

Milk.

Number on Register	Number of Inspections	Number unregistered	Number found without indicator on door	Dirty premises	Number of letters re greengroceries sent	Number of shops with vessels uncovered	Number of prosecutions
3,342	2,655	162	68	119	32	102	25

W. St. C. McClure.

Annual Report of the Medical Officer of Health for the year 1913, for the County Borough of Manchester, on the administration of the Factory and Workshop Act, 1901, in connection with

Factories, Workshops, Workplaces, and Homework.

1.—Inspection of Factories, Workshops, and Workplaces.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises	Number of		
	Inspections	Written Notices	Prosecutions
Factories (including Factory Laundries)... ...			
Workshops (including Workshop Laundries)...	13875	405	2
Workplaces (other than Outworkers' premises included in Part 3 of this Report)			
Total	13875	405	2

NATURE OF WORK *	Outworkers' Lists, Section 107.									Outwork in Unwholesome Premises, Section 108			Outwork in Infected Premises, Sections 109, 110		
	Lists received from Employers						Notices served on Occupiers as to keeping or sending lists	Prosecutions							
	Sending twice in the year			Sending once in the year											
	Lists †	Outworkers †		Lists	Outworkers			Failing to keep or permit inspection of lists	Failing to send lists	Instances	Notices served	Prosecutions	Instances	Order made (S. 110)	Prosecutions (Sections 109, 110)
		Contractors	Workmen		Contractors	Workmen									
Wearing Apparel—															
(1) Making, etc.	896	819	4870	26	12	113	A Notification sent with a blank list to each Employer twice a year	..	12	..	4	..	..	..	..
(2) Cleaning and washing	2	..	2	..	..	..		..	..	..	..	..	..	..	..
Household linen	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Lace, lace curtains, and nets	2	..	13	..	..	..		..	..	..	..	..	..	..	..
Curtains and furniture hangings	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Furniture and upholstery	12	7	30	..	..	..		..	..	..	..	..	..	..	..
Electro-plate	..	..	..	..	..	..		..	..	..	..	..	..	..	..
File making	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Brass and brass articles	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Fur pulling	2	..	11	..	..	..		..	..	..	..	..	..	..	..
Cables and chains	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Anchors and grapnels	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Cart gear	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Locks, latches, and keys	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Umbrellas, etc.	46	37	513	1	..	1		..	..	..	..	..	..	..	..
Artificial flowers	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Nets, other than wire nets	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Fents	4	..	11	..	..	..		..	..	..	..	..	..	..	..
Quilts	12	3	71	..	..	..		..	..	..	..	..	..	..	..
Gold beaters	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Paper, etc., boxes, paper bags	4	..	12	1	..	1		..	..	..	..	..	..	..	..
Window blinds	2	..	2	..	..	..		..	..	..	..	..	..	..	..
Sponges	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Hair pads	4	..	3	..	..	..		..	..	..	..	..	..	..	..
Carding, etc., of buttons, etc.	2	..	7	..	..	..		..	..	..	..	..	..	..	..
Opticians	2	2	..	..	..	..		..	..	..	..	..	..	..	..
Handkerchief hemmers	44	3	563	3	..	22		..	2	..	..	..	..	..	..
Chocolates and sweetmeats	..	..	..	..	..	..		..	..	..	..	..	..	..	..
Total	1034	871	6108	31	12	137		..	14	..	4	..	..	..	..

* If an occupier gives out work of more than one of the classes specified in column 1, and subdivides his list in such a way as to show the number of workers in each class of work, the list should be included among those in column 2 (or 5 as the case may be) against the principal class *only*, but the outworkers should be assigned in columns 3 and 4 (or 6 and 7) into their respective classes. A footnote should be added to show that this has been done.

† The figures required in columns 2, 3, and 4 are the *total* number of the lists received from those employers who comply strictly with the statutory duty of sending *two* lists each year and of the entries of names of outworkers in those lists. The entries in column 2 must necessarily be *even* numbers, as there will be two lists for each employer—in some previous returns odd numbers have been inserted. The figures in columns 3 and 4 will usually be (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name will often be repeated.

6,696 visits were paid to houses of outworkers during the year.

2.—Defects found in Factories, Workshops, and Workplaces.

Particulars	Number of Defects			No of Prosecutions
	Found	Remedied	Referred to H.M. Inspector	
*Nuisances under the Public Health Acts :—**				
Want of cleanliness	603	603	...	...
Want of ventilation	43	43	...	...
Overcrowding	4	4	...	...
Want of drainage of floors	3	3	...	...
Other nuisances	108	108	...	...
Sanitary accommodation—				
Insufficient	57	12	...	...
Unsuitable or defective...	86	27	...	...
Not separate for sexes	8	3	...	...
Offences under the Factory and Workshop Act :—				
Illegal occupation of underground bakehouse (S. 101)	1	1	...	1
Breach of special sanitary requirements for bakehouses (SS. 97 to 100) ...	130	130	...	1
Other offences (excluding offences relating to outwork which are included in Part 3 of this Report)	65	65	...	...
Total	1108	999	...	2

* Including those specified in sections 2, 3, 7, and 8 of the Factory and Workshops Act as remediable under the Public Health Acts.

4.—Registered Workshops.

Workshops on the Register (S. 131) at the end of the year		Number
Important classes of workshops, such as workshop bakehouses, may be enumerated here.	Workshops	4396
	Bakehouses	561
	Total number of Workshops on Register ...	4957

5.—Other Matters.

Class	Number
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	135
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5)—	
Notified by H.M. Inspector	130
Reports (of action taken) sent to H.M. Inspector	130
Other	292
Underground Bakehouses (S. 101) :—	
Certificates granted during the year	...
In use at the end of the year	33
Not in use at the end of the year	17
Demolished	6

Note.—The Factory and Workshop Act, 1901 (S. 132), requires the Medical Officer of Health in his Annual Report to the District Council to report specifically on the administration of that Act in workshops and workplaces, and to send a copy of his Annual Report, or so much of it as deals with this subject, to the Secretary of State (Home Office). If the Annual Report is presented otherwise than in print, it is unnecessary to include in the copy sent to the Home Office the portions which do not relate to factories, workshops, workplaces, or homework. The duties of Local Authorities and the Medical Officer of Health under the Act of 1901 are detailed in the Home Office Memorandum of December, 1904. A further Memorandum, on the Home Work Provisions of the Factory Act, was issued to all District Councils and Medical Officers of Health in October, 1906.

I append a brief Statement on the Memorandum of the Home Office upon the Structural requirements of the Factory and Workshop Acts, as

1. Means of escape from fire :

Bye-laws have been in operation since 1908. These have been amended, and in their amended form were approved by the Local Government Board in 1913.

A large amount of work has been done under these bye-laws, and practically the whole of the factories and workshops have been dealt with.

2. Sanitary accommodation :

Although the work has not been carried out under the Sanitary Accommodation Order, 1903, the conditions stated in the memorandum have been enforced, and all the factories and workshops have been dealt with, although changes are constantly occurring.

3. Provision of lavatories:

This matter is dealt with by His Majesty's Inspector of Factories and Workshops.

4. Meal rooms are also dealt with in the same manner, although in a few instances these have been provided at the suggestion of the Corporation officials.

5. General ventilation. *See* return already sent to Home Office.

6. Air space. *See* Overcrowding, same return.

7. Floor space. We have no workshops to which this section applies.

8. Lighting. This matter has received attention, but no special record has been kept.

9. Temperature. This has been dealt with only in so far as 5 is concerned.

10. Wet floors. This is dealt with, but cases are infrequent.

11. Walls and ceilings. The requirements are systematically carried out, but the attention of the Inspectors will be specially called to the possible accumulation of dust.

12. Stability of buildings. This receives attention from the Special Department concerned.

13. Basements are discouraged. New ones are refused, or specifications are made out.

Engines, etc. This would come under His Majesty's Inspector of Factories and Workshops.

HOUSING OF THE WORKING CLASSES.

In the Annual Report for the year 1912, the procedure of the Housing Sub-Committee is fully given, and need not be repeated here.

Table 1 summarises the detailed work carried out by the Housing Sub-Committee from the beginning of their operations in 1885 in the respective Sanitary Districts of the City.

TABLE I.—SHOWING THE NUMBER OF HOUSES CERTIFIED TO, AND DEALT WITH B THE COMMITTEE ON THE RESPECTIVE DISTRICTS FROM FEBRUARY, 1885, T DECEMBER 31ST, 1913:—

DISTRICT		Number Certified	Number of Houses added together or to other Houses	Number Demolished	Number Repaired and Re-opened	Number Closed	Number not closed	Number which stand adjourne
Central..	1	765	140	252	208	112	53	..
	2	1,590	174	707	561	131	17	..
	3	1,712	366	431	491	219	203	2
Cheetham	4	527	18	69	413	27	..	..
	5	77	4	4	64	5	..	..
St. George's.. ..	6	2,203	289	789	755	329	41	..
	7	1,348	119	448	688	51	42	..
	8	370	53	45	236	17	18	1
Ancoats (Part of).	9	2,650	366	637	1,109	159	371	8
,, ,, .	10	1,245	230	377	495	21	109	13
Beswick	10	67	8	6	38	2	13	..
Ancoats (Part of).	11	1,107	267	314	504	21	1	..
Ardwick (Part of).	12	1,078	195	297	500	67	19	..
,, ,,	13	348	12	27	287	2	20	..
C.-on-M.	13	166	12	15	123	6	10	..
	14	1,448	136	400	768	78	66	..
	15	1,749	241	307	861	61	279	..
Hulme	16	1,460	23	65	1,159	18	190	5
	17	1,958	136	303	1,363	49	105	2
	18	1,735	209	522	947	44	13	..
Crumpsall	19	75	25	10	32	8	..	..
Blackley	20	197	13	26	134	24	..	..
Harpurhey	20	21	2	13	6	..	..	..
Moston..	21	20	..	8	8	4	..	..
Newton	22	411	101	112	193	5	..	..
	23	181	24	49	98	10	..	..
Bradford	24	231	33	53	113	..	32	..
Clayton	25	44	10	6	13	15	..	..
Openshaw	26	200	25	54	98	23	..	..
West Gorton ..	27	340	10	26	209	27	68	..
Rusholme & Kirk.	28	177	50	38	80	8	1	..
Moss Side	29	11	..	..	2	..	9	..
Levenshulme ..	30	11	..	..	..	2	9	..
Gorton..	31	64	4	3	20	24	..	13
	32	48	2	3	20	4	19	..
Totals		25,634	3,297	6,416	12,596	1,573	1,708	44

From the above table it will be seen that though the greatest amount of attention has been given to the more central parts of the City, no portion has been neglected. It has always been part of the policy of the Housing Sub-Committee to distribute their work in such a manner as not to produce a severe dearth of house accommodation in any one part of the City. The attainment of this object has rendered it necessary to pay attention now to one, now to another, district. Alderman Walton Smith contended that by this graduated policy the inhabitants were able to readjust themselves, a gradual pressure moving the population to the outer part of the City being thus exerted.

It is possible to ascertain by a study of the Census figures whether, in fact, the result is to increase crowding in rooms or not, and figures given in the Annual Report for 1906 appear to show that, in fact, overcrowding need not result. An enlightened policy in regard to tram fares must, of course, have an important influence on the movement of the population.

The variations in activity of the operations of the Housing Sub-Committee is shown in the following table :—

TABLE 2.—RETURN SHOWING THE NUMBER OF HOUSES CERTIFIED TO, AND DEALT WITH BY, THE HOUSING, ETC., SUB-COMMITTEE IN EACH YEAR FROM FEBRUARY, 1885, TO DECEMBER 31ST, 1913, AND THE ALTERATIONS MADE AND REPORTED ON DURING THAT PERIOD.

YEAR	Number Certified and ordered to be Closed	Number of Houses added together or to other Houses	Number Demolished	Number Repaired and Re-opened	Number Closed	Number not Closed	Number which stand Adjourned
1885	63	10	46	7	..	..	..
1886	115	28	75	12	..	..	..
1887	139	51	60	22	6	..	..
1888	219	63	136	16	4	..	..
1889	300	73	194	18	15	..	..
1890	202	79	82	37	4	..	..
1891	358	129	144	72	13	..	..
1892	720	208	335	153	24	..	..
1893	675	204	255	156	60	..	..
1894	904	208	556	122	18	..	..
1895	930	227	464	222	17	..	..
1896	782	162	323	269	28	..	..
1897	441	68	202	157	14	..	..
1898	506	99	195	204	8	..	..
1899	859	189	397	219	54	..	..
1900	399	80	150	133	36	..	..
1901	132	10	45	74	3	..	..
1902	545	152	170	199	24	..	..
1903	545	112	173	240	20	..	..
1904	717	127	225	339	26	..	..
1905	576	77	198	293	8	..	..
1906	558	98	102	347	11	..	..
1907	2,716	225	693	1,505	293	..	..
1908	2,239	183	474	1,411	171	..	..
1909	2,188	93	154	1,881	60	..	..
1910	1,834	117	166	1,331	194	13	13
1911	2,327	116	190	1,626	168	227	..
1912	2,247	103	190	1,356	224	374	..
1913	1,398	6	22	175	70	1,094	31
Totals ..	25,634	3,297	6,416	12,596	1,573	*1,708	44

* In 1146 of these the owners have arranged to carry out alterations to meet the requirements of the Committee, many of which are in progress.

It will be seen that the work done has greatly increased from 1907 up to the present time. In fact the Housing Sub-Committee now meets once a week, and the amount of business which it transacts is generally large.

It will be noted that there are considerable ebbs and flows in the number of houses dealt with year by year. These represent periods of diminished zeal in the Council, and periods of renewed energy.

It is to be hoped that the Council will now continue to approve of work which appears to be having a decidedly beneficial effect on the health of the population.

These alterations are not the only works done for the improvement of dwellings. The so-called conservancy system of dealing with excreta, which ten years ago prevailed in Manchester, is now approaching abolition. This great work has partly been carried out under the Sanitary Superintendent, and partly under the City Surveyor, both, however, being under the control of the Sanitary Committee.

The alterations effected in ten years' time are exhibited in the following table, which also shows the conversions remaining to be carried out. It is very necessary that these should not be effected without corresponding alterations in insanitary dwellings, and the rate of alterations must now be retarded. But there needs only to make conversion complete that the associated insanitary dwellings should be dealt with.

The population affected by the conversions already carried out is probably over 350,000, since it is to be remembered that many of the privies converted were used by more than one family. The conversions carried out during the last ten years are shown on the following table :—

RETURN OF PAIL-CLOSETS AND MIDDEN PRIVIES ALTERED TO WATER-CLOSETS.

	Number of Pail-closets altered to Water-closets	Number of Midden Privies altered to Water-closets
From April 1st, 1903, to March 31st, 1904.. ..	1,899	1,379
,, ,, 1904, ,, ,, 1905.. ..	2,222	1,691
,, ,, 1905, ,, ,, 1906.. ..	3,297	2,600
,, ,, 1906, ,, ,, 1907.. ..	3,746	3,662
,, ,, 1907, ,, ,, 1908.. ..	1,296	918
,, ,, 1908, ,, ,, 1909.. ..	10,081	2,844
,, ,, 1909, ,, ,, 1910.. ..	11,296	1,378
,, ,, 1910, ,, ,, 1911.. ..	8,552	1,204
,, ,, 1911, ,, ,, 1912.. ..	6,970	3,180
,, ,, 1912, ,, ,, 1913.. ..	4,214	533
,, ,, 1913, ,, ,, 1914.. ..	1,420	78
	54,993	19,467

The distribution of these conversions during the year 1913 is shown in the following table:—

TABLE 3.—NUMBER OF PAIL-CLOSETS AND MIDDEN PRIVIES REPLACED BY WATER-CLOSETS, FROM JANUARY 1ST TO DECEMBER 31ST, 1913, AND THE NUMBER STILL REMAINING TO BE ALTERED.

District		Pail-closets replaced by Water-closets	Midden Privies replaced by Water-closets	Total substitution	Pail-closets requiring substitution	Midden Privies requiring substitution	Total still requiring substitution
Central	1	22	..	22	126	..	126
	2	120	..	120	210	..	210
	3	53	..	53	298	..	298
Cheetham	4	88	..	88	43	..	43
	5	8	..	8	41	..	41
St. George's	6	166	..	166	112	..	112
	7	20	..	20	43	..	43
	8	86	..	86	13	..	13
Ancoats	9	220	..	220	214	..	214
Beswick	10	2	..	2	36	..	36
Ancoats	11	16	..	16	51	..	51
Ardwick	12	200	..	200	171	..	171
	13	104	..	104	53	..	53
C.-on-M.	13						
	14	470	..	470	353	..	353
	15	126	..	126	125	..	125
Hulme	16	265	..	265	16	..	16
	17	144	..	144	61	..	61
	18	81	..	81	64	..	64
Crumpsall	19	..	..	..	1	5	6
Blackley	20	4	6	10	9	26	35
Harpurhey	20						
Moston	21	4	..	4	6	..	6
Newton	22	1	9	10	33	19	52
	23	104	..	104	54	..	54
Bradford	24	18	..	18	53	..	53
Clayton	25	..	..	..	32	38	70
Openshaw	26	..	..	..	23	..	23
West Gorton	27	..	..	..	..	31	31
Rusholme	28	..	..	..	38	..	38
Moss Side	29	..	111	111	..	58	58
Levenshulme	30	..	1	1	4	5	9
Gorton	31	..	30	30	..	39	39
	32						
Totals		2,322	157	2,479	2,283	221	2,504

J

At the same time house drainage has been reconstructed over the whole of the Central districts of the City, this reconstruction extending over a period of 15 years.

During the 7 years October 8th, 1904, to December 30th, 1911, these alterations have entailed re-sewering the back passages and repaving the yards and passages. The dwelling-houses so drained during the last 7 years number 107,623, representing a population of over 400,000.

The operations carried out are not only registered in the books of the Sanitary Committee, but are recorded on maps, so that the amount of alteration can be seen at a glance, so far as the houses and closets are concerned. The drainage alterations have not been mapped out.

These maps in crowded districts give the impression that but little of the Central areas has been neglected, and tell better than anything else the improvements which have been effected.

The details of the alterations are also preserved not only in the records, but in a growing accumulation of plans which show the past and present conditions.

The detailed work contemplated in the Housing and Town Planning Act, 1890, has thus been carried on in Manchester on a great scale for a long period of years, and the beneficent results are not yet fully realised. It is not possible to infer from the improvement in the death-rate of the whole community, either that good work has been done in the older parts of the City, or that improved statistics are due to any particular class of sanitary work.

The difficulty disappears when we take the statistics for what may be called the slum area of Manchester, in which the death-rates now are no greater than was the death-rate for the whole City of Manchester in 1891, notwithstanding that the poverty of Lancashire seeks the centre of Manchester with increased intensity. At all events some potent causes must have been at work, and improved housing is certainly one of them.

Reverting to the tables relating to insanitary dwellings, the corresponding tables for 1913 are given below.

Table 4 shows the number of houses certified as unfit for human habitation in 1913, with the result up-to-date. It will be seen that the majority of the houses not closed over the long series of years, during which these Orders have been made, belong to the year 1913, and that this is due simply to the stage which operations had reached at the end of the year.

Table 4.—Showing the Number of Houses Certified to, and Dealt with by, the Committee, for the Year 1913.

District	Number Certified and ordered to be Closed	Number of Houses added together or to other Houses	Number Demolished	Number Repaired and Re-opened	Number Closed	Number not Closed	Number which stand Adjourned
1	12	..	..	..	4	8	..
2	12	..	4	2	1	5	..
3	185	..	..	1	4	178	2
4	..	..	..	..	..	..	..
5	..	..	..	..	..	..	..
6	32	..	..	..	5	27	..
7	1	..	..	..	..	1	..
8	12	..	..	..	..	12	..
9	238	..	7	29	21	173	8
10 Ancoats ..	118	..	..	..	..	105	13
10 Beswick ..	13	..	..	..	..	13	..
11	1	..	..	..	..	1	..
12	48	..	1	34	..	13	..
13 Ardwick ..	5	..	..	..	..	5	..
13 C.-on-M. ..	2	..	..	1	1	..	..
14	49	..	..	9	4	36	..
15	359	..	5	54	23	276	1
16	180	..	3	28	..	144	5
17	81	6	1	14	3	55	2
18	1	..	..	..	1	..	..
19	..	..	..	..	..	..	..
20 Blackley ..	1	..	..	1	..	..	..
20 Harpurhey	..	..	..	..	..	..	..
21	..	..	..	..	..	..	..
22	..	..	..	..	..	..	..
23	3	..	..	..	3	..	..
24	30	..	..	..	..	30	..
25	..	..	..	..	..	..	..
26	..	..	..	..	..	..	..
27	..	..	..	..	..	..	..
28	4	..	1	2	..	1	..
29	9	..	..	..	..	9	..
30	..	..	..	..	..	..	..
31	..	..	..	..	..	..	..
32	2	..	..	..	..	2	..
Total ..	1,398	6	22	175	70	*1,094	31

* In 582 of these cases the owners have arranged to make alterations to meet the requirements of the Committee.

It will be seen from the tables previously given that the rate of conversion of privies is slackening. This arises partly from the fact that comparatively few closets remain to be converted, partly from the circumstance that the remaining houses at which conversion is required are chiefly the residuum requiring the attention of the Housing Sub-Committee on account of their insanitary condition.

The following is a classification of the houses represented to the Committee as unfit for human habitation, arranged according to the regulations of the Local Government Board.

This classification does not represent the houses inspected, but only those reported as unfit for human habitation. It has not been possible to supply figures for the houses inspected with special reference to the Housing and Town Planning Act.

The question as to the manner in which house inspections shall be made and registered has now received the attention of the Housing Sub-Committee.

TABLE SHOWING THE RESULTS OF INSPECTION OF HOUSES REPORTED TO THE HOUSING SUB-COMMITTEE AS UNFIT FOR HUMAN HABITATION DURING THE YEAR 1913.

Number of Dwelling-houses inspected for all purposes	77,925
„ considered by the District Inspector of Nuisances unfit for human habitation	1,398
„ of representations made by the Sanitary Superintendent under a Local Act	1,398
„ of Closing Orders made	1,367
„ of Dwelling-houses the consideration of which stand adjourned	31
„ put in a fit state for human habitation after Closing Order had been made	181
General character of defects stated to exist :—	
Ventilation defective	368
Light defective	221
Closet accommodation defective	1,093
External disrepair	757
Internal disrepair	537
Drainage defective	110
*Dampness	28
Water supply defective	66
Dirty—always immediately cleansed.	
Arrangement for deposit of refuse defective	1,104
Yards require paving	38
Passages require paving	20

The new houses certified during the year 1912–1913 is given in the following table A. It will be noted that there is a considerable reduction as compared with the numbers for previous years.

The reduction in neighbouring districts shown in Table B is even greater than in Manchester. If the natural increase in the population may be taken as a guide to the rate of growth of the population, taken in association with the growth of manufactures, it follows that the number of persons per house is increasing, and that overcrowding is probably increasing.

* All insanitary houses are more or less damp, since there is no damp-proof course in the older houses.

TABLE A—STATEMENT AS TO THE NUMBER OF NEW DWELLING-HOUSES CERTIFIED AS FIT FOR HUMAN HABITATION IN THE VARIOUS DIVISIONS OF THE CITY BETWEEN 1893 AND 1913.

DISTRICT	1893 to 1894	1894 to 1895	1895 to 1896	1896 to 1897	1897 to 1898	1898 to 1899	1899 to 1900	1900 to 1901	1901 to 1902	1902 to 1903	1903 to 1904	1904 to 1905	1905 to 1906	1906 to 1907	1907 to 1908	1908 to 1909	1909 to 1910	1910 to 1911	1911 to 1912	1912 to 1913	TOTALS
Ancoats	70	7	97	113	53	25	28	33	1	4 including 1 Lodging house	11	1	46†	13‡	39	1	16*			...	843
Central																		5	5	...	
St. George's ..	...	...	...	...	...	...	...	...	5	1	9	*95	...	...	...	31	*			...	334
Cheetham ...	97	37	155	269	370	315	128	253	171	199	240	133	186	226	101	280	145	99	87	36	3749
Crumpsall ...	24	44	39	37	41	18	102	53	56	82	85	57	50	60	66	44	5	7	14	31	957
Blackley	5	19	41	31	56	67	58	33	42	57	53	124	95	130	175	102	125	103	87	56	1512
Harpurhey ...	170	191	342	253	346	327	169	129	70	92	14	7	30	149	7	12	3	...	..	...	2486
Moston	89	148	193	225	263	248	282	179	78	109	156	222	327	481	394	436	383	318	102	48	4789
Newton	30	65	140	96	136	134	110	90	211	167	230	193	287	159	130	91	112	10	6	45	2512
Bradford	21	65	67	198	91	103	198	47	239	29	40	7	5	...	26	57	19	12	...	...	1398
Beswick	8	...	97	118	128	98	119	175	94	...	15	...	...	4	...	...	...	...	1	...	882
Clayton	9	39	111	152	161	229	234	164	104	107	113	103	113	112	112	131	85	111	62	9	2334
Ardwick	59	177	261	192	295	361	145	110	109	171	13	45	36	27	15	11	...	...	7	...	2097
Openshaw ...	15	60	69	71	152	119	182	80	190	145	155	91	84	108	97	39	131	73	114	138	2524
Gorton (West)	2	2	20	87	236	178	57	...	...	...	50	38	3	...	...	...	...	...	...	...	991
Rusholme and Kirk.	89	211	277	294	354	486	462	288	346	258 / 122	453	261 / 95	356	345 / 109	454	474 / 118	592	408 / 57	465	253 / 64	317	114 / 74	188	71 / 55	39	64 / ...	64	6405
C.-on-M.	88	18	36	46	57	1	32	48	27	12	15	5	2	1	38	56	57	2	...	...	761
Hulme	1	...	29	24	4	3	2	4	1	6	..	1	2	...	1	...	...	...	...	90	171
Moss Side ...	...	...	...	...	...	...	...	...	...	...	...	364	220	66	51	103	100	9	41	10	964
Withington ...	...	...	...	...	...	...	...	...	...	...	...	362	560	506	532	633	666	614	468	435	4776
Gorton	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	24	31	16	...	71
Levenshulme..	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	197	58	23	35	313
City Totals ...	777	1083	1974	2206	2743	2712	2308	1686	1744	1561	1652	2264	2500	2634	2249	2344	2256	1578	1072	997	40401

* NOTE.—Including 64 Dwelling-houses belonging to Sanitary Committee and 1 Lodging-house. † Including 1 Lodging-house and 44 Tenements at Chief Fire Station. ‡ Including 2 Lodging-houses.

Table B—New Houses Certified in Outside Districts from 1894 to 1913.

DISTRICTS	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Salford	454	613	883	872	1268	885	674	818	733	603	599	619	519	581	415	554	563	293	248	188
Eccles	100	118	113	165	219	202	215	215	185	244	226	323	346	218	202	231	178	117	74	63
Stretford	274	356	313	355	340	262	265	320	329	379	483	365	376	341	236	304	258	181	101	79
Urmston	34	80	102	135	88	43	18	21	24	35	106	90	50	35	40	13	20	18	3	1
*Withington Urban District Council : Withington, including Whalley Range	50	70	79	162	171	225	169	59	52	35	139	..	..	..	..	..	..	..	..	..
Didsbury	26	79	55	45	66	139	66	37	34	43	68	..	..	..	..	..	..	..	..	..
Burnage	21	..	1	24	13	1	14	14	59	1	..	..	..	..	..	..	..	..	..	..
Chorlton-cum-Hardy	37	94	155	182	152	55	191	220	182	247	215	..	..	..	..	..	..	..	..	..
*Moss Side	..	..	..	..	119	35	403	400	314	157	234	..	..	..	..	..	..	..	..	..
*Levenshulme	..	..	..	..	224	290	420	180	236	278	318	328	184	131	92	233	..	..	..	..
Droylsden	..	..	..	..	126	36	41	43	..	135	50	33	38	65	30	34	12	12	37	23
*Gorton	..	..	..	..	397	411	352	353	187	402	362	391	685	519	339	149	..	..	..	..
Totals	996	1410	1701	1940	3183	2584	2828	2680	2335	2559	2800	2149	2198	1890	1354	1518	1031	621	463	354

* The figures for these districts, since their incorporation within the City, are given in Table A.

The corresponding table for neighbouring districts shows a similar reduction.

House inspection is now being carried out in the manner prescribed by the Regulations of the Local Government Board under the Housing and Town Planning Act, the records being in card index form, and under the charge of Mr. Irvine, of the City Surveyor's Department. The card index system was commenced during the present year.

MONSALL HOSPITAL.

Report by Dr. James Fletcher, Medical Superintendent.

Report for 1913.

The number of patients admitted was 3,193, which shows an increase of 890 over the preceding year; this is the largest number of admissions to the hospital since 1901.

The admissions of Scarlet Fever, Diphtheria, and Enteric Fever were much higher, but those of Erysipelas and Puerperal Fever rather lower than in 1912.

The average daily number of patients in hospital was 458·4, as against 318·3 in 1912.

The average length of stay in hospital for all patients who recovered was 55·3 days; for fatal cases 11·2.

The average daily number of resident officers, nurses, and servants was 176.

The fatality rate for all cases was 6·7 per cent., as against 7·7 in 1912; the rates for Scarlet Fever, Diphtheria, and Enteric Fever were lower, but those for Erysipelas and Puerperal Fever higher than in the previous year; 55, or rather more than a quarter of the deaths occurred within 48 hours of admission.

The health of the staff during the year was fairly good. Two Medical Officers, four nurses, six maids, and one porter contracted Scarlet Fever; eight nurses and two porters contracted Diphtheria; one nurse each contracted Enteric Fever, Erysipelas, and Rötheln. All the above, however, made good recoveries.

Twenty-one applications were received for the post of Ward Sister and 308 for Probationerships, of which 1 and 42 respectively were accepted.

Sixteen Probationers left during or at the end of their trial months; 25 finished their training, 10 of whom proceeded to a General Hospital.

A gradually increasing difficulty is being experienced in obtaining suitable candidates as Probationers; the number of applicants remains much the same, but there is a distinct falling off both socially and in general education.

SCARLET FEVER.

The number of patients admitted was 2,247, which is 838 more than in 1912.

Of 20 admissions, 10 were also suffering from Diphtheria, 7 from Whooping Cough, and 3 from Varicella ; whilst of 11 others, 6 were incubating Whooping Cough, 4 Chicken Pox, and 1 German Measles.

The type of disease generally speaking was fortunately not severe ; 64 deaths occurred, giving a fatality rate of 2·9 per cent, as against 3·1 in 1912 ; the rate was higher in males than in females.

Eleven patients died within 48 hours of admission.

The average stay in hospital for patients who recovered was 56·3 days ; for fatal cases 14.

POST-SCARLATINAL DIPHTHERIA AND DIPHTHERIA "CARRIERS."

Five patients developed an attack of Post-Scarlatinal Diphtheria, of whom four recovered and one died.

A culture was taken from the nose and throat of each Scarlet Fever patient on admission, with the result that 25 per cent. of the patients were found to be harbouring a bacillus corresponding morphologically with the Diphtheria Bacillus ; the bacillus was found in the nose in 6·9 per cent., the throat in 13·7, and the nose and throat in 4·4 of the cases.

Two large Pavilions were set apart throughout the year for the nursing of such cases.

Though the large majority of the patients were purely "carriers," clinical signs of Diphtheria were present in some, whilst in others the diphtheritic element was shown by the occurrence of such symptoms as irregularity of the pulse, bradycardia, or faintness during convalescence.

"Return" Cases.

The number of alleged infecting cases, which gave rise to 74 secondary cases, out of a total of 2,122 discharges, was 71 ; this gives a "return" case rate of 3·3 per cent., as against 3·7 in 1912.

If the interval which elapsed between the arrival home of the infecting patient and the onset of the "return" case be limited to a month, the rate becomes 2·5 per cent., as against 2·8 in 1912.

The average number of days ill of the infecting cases was 58·5, and the average interval, in days, between the return home of the patient and the onset of the "return" case 18·4, the extremes being 1 and 70.

Forty-eight of the 71 infecting patients had uncomplicated attacks. One of the alleged infecting patients showed no signs or symptoms of Scarlet Fever whilst in hospital, and in four instances the "return" case was a member of another family with whom the infecting patient was stated to have come in contact; the age of the "return" case was less than that of the infecting one in about 60 per cent. of the cases.

DIPHTHERIA.

Four hundred and fourteen patients were admitted, being 101 more than in 1912.

Of 20 admissions, 14 were also suffering from Scarlet Fever and 6 from Measles.

Sixty-four deaths occurred, giving a fatality rate of 16 per cent., as against 21·03 in 1912; the rate was higher in males than in females. Twenty-eight of the deaths took place within 48 hours of admission, and in four cases a concurrent attack of Measles was a contributory cause of death.

The larynx was found to be involved on admission in 30 per cent. of the cases.

Tracheotomy was performed on 63 patients, of whom 31 died, giving a fatality rate of 49·2 per cent. Of the deaths, 16 occurred within 48 hours of admission.

Antitoxin, usually in very small dose, had been given before admission to about a third of the patients.

A serum rash was noted in 38 per cent. of those injected in hospital.

A swab had been taken before admission in only 39 per cent. of the cases.

The average stay in hospital for patients who recovered was 61·1 days; for fatal cases 10·2.

ENTERIC FEVER.

The number of admissions was 226, or 81 more than in 1912.

Thirty-five patients died, giving a fatality rate of 15·6 per cent., as against 20·8 in 1912; the rate was higher in males than in females.

Three deaths occurred within 48 hours of admission.

A large proportion of the patients continue to be admitted late in the disease, rather more than 59 per cent. being admitted in the third week or later.

The average stay in hospital for patients who recovered was 63·8 days; for fatal cases 11·9.

Before discharge from hospital the stools and urine of all patients were submitted to bacteriological examination to ascertain the absence of the Typhoid Bacillus. Of 189 cases, 179 gave negative results and 10 positive, the urine being positive in eight instances and the stools in two.

ERYSIPELAS.

The admissions numbered 86, a decrease of 26 on the previous year.

Eleven deaths occurred, giving a fatality rate of 12·1 per cent., as against 5·5 in 1912.

Two deaths took place within 48 hours of admission.

The average stay in hospital for patients who recovered was 26·7 days; for fatal cases 8.

PUERPERAL FEVER.

Eighty-two patients were admitted, a decrease of 6 on 1912. The infant was in 37 instances admitted with the mother.

Sixteen patients died, giving a fatality rate of 20 per cent., as against 15·9 in 1912; five deaths took place within 48 hours of admission.

Of the deaths, 10 were due to Septicæmia, 2 to Pneumonia, and 1 each to Fatty Degeneration of Heart, Uterine Hæmorrhage, Peritonitis, Septicæmia and Uterine Hæmorrhage.

The average number of days ill on admission for cases which recovered was 4·9; for fatal cases 5·8.

The average stay in hospital for patients who recovered was 44·2 days; for fatal cases 5·4.

OTHER DISEASES.

In this class are included patients whose illness was incorrectly diagnosed, certain cases of non-notifiable disease, and infants admitted with their mother.

Twenty deaths occurred, giving a fatality rate of 14·2 per cent. Six deaths took place within 48 hours of admission.

The average stay in hospital for patients who recovered was 33·7 days; for fatal cases 10·3.

LABORATORY REPORT.

The work done in the Laboratory, owing to the large increase in the number of admissions, has been very heavy, but of the extreme value of such investigations there can be no doubt.

All the necessary media were prepared by the Dispenser at the hospital. The number of Bacteriological examinations performed were as follows :—

Cultures from Nose, Throat, and Ear	18,228
,, Uterus	62
Widal Reactions	139
Typhoid Stools	227
,, Urine	239
Examination of Sputum	12
,, Hair	9
,, Pus	5
,, Spinal fluid	1
	18,922

JAMES FLETCHER.

MONSALL HOSPITAL.

STATISTICAL REPORT FOR THE YEAR 1913.

Remaining in Hospital on January 1st, 1913	404
Patients admitted during 1913	3,193
	3·597
Recovered and died during 1913	3,121
Remaining in Hospital on December 31st, 1913.. ..	476
	3,597
Total number of deaths during 1913	210
Net mortality	6·7%
Of the deaths, 55 occurred within 48 hours of admission	26·1%
Daily average number of patients	458·4
Daily average number of officers, nurses, and servants	176·0
Average stay of recovered patients (in days)	55·3
,, ,, fatal cases	11·2

Table showing Monthly Distribution of Diseases throughout the Year.

Discharges and Deaths.

1913	Scarlatina	Diphtheria	Enteric Fever	Erysipelas	Puerperal Fever	Other Diseases	Total
January	138	34	22	9	3	11	217
February	117	34	17	13	5	5	191
March	134	37	23	5	7	20	226
April	134	49	23	7	8	16	237
May	117	21	31	3	10	13	195
June	168	31	21	4	3	7	234
July	197	28	15	9	8	12	269
August	228	23	16	4	5	11	287
September..	226	43	6	6	5	8	294
October	233	25	16	9	9	13	315
November..	261	38	11	11	6	7	334
December	233	37	23	11	11	17	332
Total	*2186	†400	224	91	80	140	3121

* Of these, 3 had Scarlatina and Varicella
„ 7 „ „ „ Pertussis
„ 10 „ „ „ Diphtheria
„ 12 „ „ „ Ringworm
„ 2 „ „ „ Scabies

† Of these, 14 had Diphtheria and Scarlet Fever
„ 6 „ „ „ Measles
„ 1 „ „ „ Ringworm

} Co-existent.

Table showing Numbers of Various Diseases treated.

Disease	Remaining in Hospital, Jan. 1st, 1913	Admitted during 1913	Discharges and Deaths during 1913	Remaining in Hospital. Dec. 31st, 1913
Scarlatina	284	2247	2186	345
Diphtheria	62	414	400	76
Enteric Fever.....	36	226	224	38
Erysipelas	10	86	91	5
Puerperal Fever.....	6	82	80	8
Other Diseases	6	138	140	4
Total.....	404	3193	3121	476

Case Mortality Per Cent.

Year	Scarlatina	Diphtheria	Enteric Fever	Puerperal Fever	All diseases
1903	4·7	18·4	19·2	22·2	8·5
1904	3·3	16·3	14·1	50·0	6·5
1905	3·6	19·9	15·1	24·4	8·4
1906	4·5	19·3	18·1	24·4	8·2
1907	4·5	17·2	10·2	24·4	7·4
1908	3·8	19·5	16·8	20·3	7·5
1909	5·7	18·3	16·9	27·0	8 8
1910	3·3	17·8	16·3	19·7	7·7
1911	2·6	19·3	14·5	15·2	6·6
1912	3·1	21·0	20·8	15·9	7·7
1913	2·9	16·0	15·6	20·0	6·7

Scarlatina.

Age of Patients	MALE			FEMALE			TOTAL		
	Cases	Died		Cases	Died		Cases	Died	
Under one year ...	9	1		5	...		14	1	
1 to 2 years ...	33	7		16	4		49	11	
2 to 3 ,, ...	58	1		61	5		119	6	
3 to 4 ,, ...	102	6		86	3		188	9	
4 to 5 ,, ...	125	7		107	5		232	12	
5 to 10 ,, ...	470	12		529	7		999	19	
10 to 15 ,, ...	178	...		185	3		363	3	
15 to 20 ,, ...	46	1		55	...		101	1	
20 to 25 ,, ...	25	...		34	1		59	1	
25 to 30 ,, ...	8	...		20	...		28	...	
30 and over ,, ...	12	...		22	1		34	1	
			Mortality per cent.			Mortality per cent.			Mortality per cent
Total	1066	35	3·3	1120	29	2·5	2186	64	2·9

Of the deaths, 2 were complicated by another co-existent disease; 11 deaths occurred within 48 hours of admission.

Percentage Complications in Scarlet Fever, 1913.

Complication	Number	Percentage
Rhinorrhœa of Convalescence..	220	10·06
Otorrhœa	206	9·4
Nephritis	80	3·6
Albuminuria of Convalescence..	100	4·5
Adenitis and Abscess	31	1·4
Onychia	23	1·05
Relapse	15	0·7
Pneumonia	14	0·6
Arthritis	11	0·5
Vaginitis	8	0·3
Endocarditis	5	0·2
Mastoid Abscess	4	0·1

SCARLATINA—*continued*

YEAR	No. of Scarlatinal Discharges and Deaths	No. of Cases of Post Scarlatinal Diphtheria	Case Percentage	Died
1901	2669	104	3·90	3
1902	2018	29	1·43	1
1903	1877	8	0·42	2
1904	1560	7	0·45	0
1905	1499	13	0·90	0
1906	1897	10	0·53	1
1907	1548	1	0·06	0
1908	1763	2	0·11	0
1909	1960	1	0·05	0
1910	1573	4	0·25	0
1911	1243	2	0·16	0
1912	1401	7	0·49	0
1913	2186	5	0·22	1

DIPHTHERIA.

AGE OF PATIENTS	MALE			FEMALE			TOTAL		
	Cases	Died		Cases	Died		Cases	Died	
Under 1 year ...	5	4		6	4		11	8	
1 to 2 years ...	23	4		13	3		36	7	
2 ,, 3 ,, ..	18	4		19	3		37	7	
3 ,, 4 ,, ...	19	4		20	7		39	11	
4 ,, 5 ,, ...	16	3		29	4		45	7	
5 ,, 10 ,, ...	61	9		100	12		161	21	
10 ,, 15 ,, ...	20	...		18	1		38	1	
15 ,, 20 ,, ...	5	1		8	...		13	1	
20 ,, 25 ,, ...	4	1		7	...		11	1	
25 ,, 30 ,, ...	2	...		0	...		2	...	
30 and over ...	...	...		7	...		7	...	
			Mortality per cent.			Mortality per cent.			Mortality per cent
Total	173	30	17·3	227	34	14·9	400	64	16·0

28 deaths occurred within 48 hours of admission.

Of the deaths, 5 were complicated by other co-existent diseases.

Diphtheria.

Table showing interval elapsing between Date when the Patient was first seen by a Medical Man and the Date of Admission to Hospital, also showing Day of Disease on Admission.

Days' Interval	Interval between admission and date when patient was first seen by a Medical Attendant		Day of disease on admission	Day of disease on admission	
	All Cases	Deaths		All Cases	Deaths
Sent in on the same day	100	16	Sent in on the same day	14	3
1 day interval	94	17	2nd day.....	45	8
2 days' ,, ...	58	8	3rd ,, ...	74	13
3 ,, ,, ...	52	9	4th ,, ...	69	11
4 ,, ,, ...	33	5	5th ,, ...	63	10
5 ,, ,, ...	21	2	6th ,, ...	44	9
6 ,, ,, ...	8	1	7th ,, ...	26	3
7 ,, ,, ...	4	...	8th ,, ...	16	...
8 ,, ,, ...	5	1	9th ,, ...	11	1
9 ,, ,, ...	1	...	10th ,, ...	11	1
10 ,, ,, ...	3	...	Over 10th day ...	17	3
Over 10 days' interval	7	3	No information ...	10	2
No information	14	2			
Total	400	64	Total	400	64

Complications in Diphtheria.

Complication	Number of Cases	Percentage
Otorrhœa	11	2·7
Broncho-pneumonia	8	2·0
All forms of Paralysis	53	13·2
Palate alone	31	7·7
Cardiac Paralysis	5	1·2
Other Paralysis	17	4·2

Tracheotomy Cases.

Age of Patients	No. of Patients	Died	Mortality per cent.
Under 1 year	3	3	100
1 to 2 years	14	7	50
2 ,, 3 ,, ...	14	5	35·7
3 ,, 4 ,, ...	12	8	66·6
4 ,, 5 ,, ...	7	3	42·8
5 ,, 10 ,, ...	13	5	38·4
10 ,, 15 ,, ...	...	...	...
15 ,, 20 ,, ...	...	...	...
Total	63	31	49·2

Of the deaths, 16 occurred within 48 hours of admission.

Enteric Fever.

Age of Patients	MALE			FEMALE			TOTAL		
	Cases	Died		Cases	Died		Cases	Died	
Under one year ...	...	...		...	...		...	...	
1 to 2 years ...	1	...		...	...		1	...	
2 to 3 ,, ...	...	...		...	...		...	...	
3 to 4 ,, ...	1	...		1	...		2	...	
4 to 5 ,, ...	1	...		1	1		2	1	
5 to 10 ,, ...	7	1		8	1		15	2	
10 to 15 ,, ..	19	...		9	...		28	...	
15 to 20 ,, ...	15	3		5	1		20	4	
20 to 25 ,, ...	20	2		13	1		33	3	
25 to 30 ,, ...	25	6		11	1		36	7	
30 to 35 ,, ...	25	7		12	2		37	9	
35 to 40 ,, ...	8	1		4	...		12	1	
40 to 45 ,, ...	9	2		10	...		19	2	
45 to 50 ,, ...	4	1		4	2		8	3	
50 and over ...	5	1		6	2		11	3	
			Mortality percent.			Mortality percent.			Mortality percent
Total.....	140	24	17·1	84	11	13·1	224	35	15·6

Of the deaths. 3 occurred within 48 hours of admission,

Percentage of Complications in Enteric Fever.

Complication	Number of Cases	Percentage	Complication	Number of Cases	Percentage
Pneumonia	5	2·2	Intestinal Hæmorrhage	27	12·1
Peritonitis	1	0·4			
Relapse	9	4·01	Perforation and Peritonitis	5	2·2

Enteric Fever.

Table showing Interval elapsing between Date when Patient was first seen by a Medical Man and the Date of Admission to Hospital, also showing Day of Disease on Admission.

Days' Interval	Interval between admission and date when Patient was first seen by a Medical Attendant		Day of disease on admission	Day of disease on admission	
	All Cases	Deaths		All Cases	Deaths
Sent in on same day...	...	...	Admitted same day	...	...
1 day interval ..	11	...	2nd day	...	...
2 days' ,, ...	2	...	3rd ,, ...	1	...
3 ,, ,, ...	12	4	4th ,, ...	1	...
4 ,, ,, ...	16	1	5th ,, ...	1	...
5 ,, ,, ...	16	4	6th ,, ...	5	...
6 ,, ,, ...	12	5	7th ,, ...	7	...
7 ,, ,, ...	16	4	2nd week	76	12
8 ,, ,, ...	15	1	3rd ,, ...	106	14
9 ,, ,, ...	13	1	4th ,, ...	15	7
10 ,, ,, ...	14	...	5th ,, ...	6	1
Over 10 days' interval	66	8	Indefinite	6	1
Indefinite	31	7			
Total	224	35	.....	224	35

Other Diseases.

Certified as	Actual Disease	No.
Scarlatina.....	Tonsillitis	26
,, ...	Erythema	6
,, ...	Measles	4
,, ...	Nil	1
,, ...	Rötheln.....	3
,, ...	Whooping Cough and Pneumonia...	1
,, ...	Enteritis.	1
,, ...	Varicella	2
,, ...	Urticaria	1
,, ...	Enema Rash ..	1
,, ...	Influenza	1
Total...47 or 2·1% of cases discharged and died.		
Diphtheria ...	Tonsillitis	7
,, ...	Phthisis	3
,, ...	Measles	2
,, ...	Cancrum Oris.	1
	Total...13 or 3·1%	
Puerperal Fever	Abortion	3
,, ...	Miscarriage ...	2
,, ...	Nil	2
,, ...	Incomplete Abortion	1
,, ...	Phthisis	1
,, ...	Tubercular Ulceration of Intestine	1
,, ...	Pneumonia ...	1
,, ...	Chronic Bright's Disease and Pneumonia ..	1
,, ...	Premature Birth	1
	Total...13 or 13·9%	

Certified as	Actual Disease	No.
Enteric Fever...	Pneumonia ...	2
,, , ...	Bronchitis	1
,, ,, ...	Nil	1
,, ,, ...	Diarrhœa	1
,, ,, ...	Tubercular Peritonitis	1
,, ,, ...	Tubercular Meningitis	1
,, ,, ...	Myelogenous Leukaemia	1
,, ,, ...	Influenza	1
	Total...9 or 3·8%	
Erysipelas ...	Cellulitis	2
,, ...	Adenitis.....	1
,, ...	Abscess of Eyelid	1
,, ...	Contused Wound	1
,, ...	Suppurative Parotitis	1
,, ...	Suppurative Bursitis	1
,, ...	Eczema	1
,, ...	Quinsy	1
	Total...9 or 9%	
"With Mother"	With Mother...	43
Measles	Measles	2
For Observation	Nil	1
Croup	Measles and Broncho-pneumonia...	1
Abortion	Abortion	1
"With Mother"	Ophthalmia Neonatorum	1

Total of other Diseases, 140.

In the other diseases there were 20 deaths, 6 of which occurred within 48 hours of admission. Total mortality of other diseases, 14·2 per cent.

Particulars of "Return" Cases of Scarlet Fever.

Number of alleged originating cases	71
Ditto "return" cases	74
Alleged originating case percentage of Scarlet Fever patients Discharged	3·3
Alleged "return" case percentage of Scarlet Fever patients Discharged	3·4

Table A.

"RETURN" CASES.

Showing duration of Disease of Originating Case.

Time	No. of Cases
4 to 5 weeks	1
5 to 6 ,, ...	12
6 to 7 ,, ...	16
7 to 8 ,, ...	14
8 to 9 ,, ...	8
9 to 10 ,, ...	4
10 to 11 ,, ...	2
11 to 12 ,, ...	2
Over 12 ,, ...	12
Total	71

Table B.

"RETURN" CASES.

Showing Condition of Originating Case both On and After Discharge.

Condition on Discharge.

Nothing abnormal	59
Still Desquamating	12
	71

Condition after Discharge.

Nothing abnormal	44
Rhinorrhœa	11
Desquamating	7
"Sore" Nose	5
Swollen Glands	2
"Sore" Nose and Desquamating	2
	71

Table C.

Showing Interval Elapsing between Discharge of Original Case and Onset of Secondary Cases.

Time	No. of Cases
Under 48 hours	1
2 and under 3 days	0
3 ,, 4 ,, ...	4
4 ,, 5 ,, ...	3
5 ,, 6 ,, ...	10
6 ,, 7 ,, ...	5
7 ,, 14 ,, ...	18
14 ,, 21 ,, ...	11
21 ,, 28 ,, ...	5
28 ,, 35 ,, ...	4
5 weeks and over.....	13
Total	74

Table D.

Showing interval between the Discharge of the 71 alleged Originating Cases and 71 alleged Return Cases respectively, and the percentage of Scarlet Fever Patients Discharged.

Time	No. of Cases	Percentage of Scarlet Fever Patients Discharged
Up to 14 days	43	2·02
15 to 28 days..	12	0·56
Over 28 days	16	0·7
Total..	71	3·3

Note.—Where more than one case is said to have originated from a discharged case, the date is taken from the first.

BAGULEY SANATORIUM.

By Herbert S. Lister, M.B., Ch.B., M.R.C.S., Medical Superintendent.

1913.

In presenting this, the first annual report of the Sanatorium since its conversion to a Hospital for the treatment of Tuberculosis, it would perhaps be well to give a brief history of its inception and progress up to the present time.

The Sanatorium was opened by the Withington Urban District Council in 1902 for the treatment of the acute infectious fevers for which it was admirably planned and equipped.

About the middle of 1912 it was decided to cease the treatment of infectious diseases, and convert the Sanatorium into a Hospital for Tuberculosis.

Preparations were made at Monsall Hospital for the reception of the fever patients then in the Sanatorium, who were removed in October. The Hospital was then thoroughly disinfected and cleaned throughout. It was opened on November 9th for the treatment of persons suffering from Tuberculosis, without the provision of any equipment other than that already existing for the treatment of cases of "Fever," the Committee being of the opinion that it was advisable to begin treating at once those cases of Tuberculosis recommended for Hospital benefit, and to proceed later with the alterations and provision of special equipment necessary rather than to keep the patients—many of them very seriously ill—waiting for treatment whilst the changes were being brought about.

This policy was justified by the facts that it was over six months before the Committee were in a position to proceed with the remodelling of the Hospital, and that during this period between three and four hundred patients had passed through the institution, many of whom reaped great benefit. The change, however, caused difficulty to both the medical and nursing staffs, and at the time led to a certain amount of dissatisfaction among the patients.

To summarise some of the difficulties, there was an entire absence of any provision other than the actual Hospital wards—no outdoor shelters, no proper dining rooms, no recreation rooms. The convalescent patients, as well as those acutely ill, were of necessity confined to their wards during wet or inclement weather, and, in spite of every effort to classify the patients, it not infrequently happened that the more convalescent had to spend part of the day, and, occasionally, even have their meals, in wards with very poorly patients.

Recreations, too, were of necessity restricted to such games as cards, dominoes, draughts, and chess, and any similar game permissible in a hospital ward.

Great difficulty was experienced in getting a sufficient and experienced staff. This, of course, was only natural with the increased demand for institutional treatment throughout the country. This difficulty is still experienced, though by no means so acutely. It is, also, more severely felt in a hospital for advanced cases such as we have at Baguley.

An efficient cook was not at first obtained.

Another source of complaint amongst the patients in the earlier days was the absence of chaplains and religious services.

I am glad to say, however, that these difficulties are being surmounted. Four open-air shelters have been provided, each capable of holding 18 to 20 patients. A large recreation room has been provided temporarily in one of the hospital store rooms, equipped with piano, billiard table, bagatelle board, and numerous games such as cards, draughts, chess, dominoes, etc. There is the nucleus of a small library, from which books can be borrowed twice weekly. Here also the chaplains hold service on Sunday afternoons. In addition to holding service, each chaplain visits the wards once weekly, and at any other time if his services are desired.

During the year ending December, 1913, 521 patients were admitted. With the 66 who remained in the Hospital from 1912, a total of 587 were under treatment during the year. Of these, 391 were discharged and 57 died, leaving 139 in Hospital at the end of 1913. Of the 521 patients admitted, 430 were insured, 82 were uninsured, and 9 were admitted from the Bucklow District.

357 were male and 164 were female patients.

The daily average number of patients was 122, out of a possible 140. It will be evident, therefore, that, allowing for the two or three days which of necessity had to elapse before vacancies could be filled, the beds occupied were used almost to their utmost. Indeed on several occasions every bed was occupied.

The average stay of each patient was 98·9 days.

On the whole the results of treatment have been very satisfactory, considering the advanced character of the cases coming for treatment. Of the total number of discharges, 309 showed improvement. Seven patients gained over 2 stones in weight—the greatest being 2 stones 11 pounds, and 79 gained over 1 stone. In the majority of cases this improvement in weight was accompanied by improvement in the general condition of the patients and relief of their symptoms to a greater or less extent. The improvement is indicated by the capacity for work, as recorded in tabular form later in the report. Of the residue of the patients, 42 lost weight, 57 died.

The subjoined table gives the number of patients in Hospital at the commencement of each month; also the number admitted, discharged, and died during each month. Also the totals for the whole year.

Number in Hospital	Admitted	Discharged	Died	Remaining
January 1st 66	39	13	2	90
February 1st 90	33	13	5	105
March 1st 105	51	13	6	137
April 1st 137	39	37	3	136
May 1st 136	32	27	5	136
June 1st 136	47	45	2	136
July 1st 136	45	27	8	146
August 1st 146	44	47	5	138
September 1st 138	31	52	2	115
October 1st 115	56	34	5	132
November 1st.. 132	38	38	9	123
December 1st.. 123	66	45	5	139
Total for Year	521	391	57	139

Working Capacity on Discharge.

Full..	71
Good	32
Very fair	20
Fair..	129
Poor	52
Nil	87
Total	391

Age.—The ages of all patients discharged or died are grouped in the following table, in periods of 5 years :—

Age	1–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40	40–45	45–50	50–55	55–60	60–65	65–70
Number of Patients... ...		2	1	62	67	72	62	81	55	30	12	3	...	1

In order that some idea of the stage at which the patients are admitted to the Sanatorium may be conveyed, the whole of the cases have been divided according to the method of Turban :—

Turban I.—Disease of slight severity, affecting not more than either (1) one apex down to the second rib in front, or (2) two apices extending not more than to the clavicle in front and the spine of the scapala behind.

Turban II.—More extensive than I., but affecting not more than one lobe, or, if very acute, half a lobe.

Turban III.—All cases of greater severity than II.

It will be seen that the vast majority of cases fall under the heading Turban III. Even this fails to convey a true idea of the advanced stage of the disease, for Turban III. includes all cases in which the extent of the lesion is equal to or exceeds that mentioned above, or, unfortunately, the vast majority of our patients showed far more extensive lesions.

Turban	I.	32
„	II.	128
„	III.	293
Probably not Pulmonary Tuberculosis ..		5
Total		448

Tuberculin.—Very little scope has been found for the employment of Tuberculin either as a means of diagnosis or treatment.

The diagnosis has for the most part been clear, and has been confirmed by the presence of bacilli in the sputum. For treatment by Tuberculin the majority of the cases are much too far advanced. It has been begun in several of the earlier cases, but it has been impossible to detain the patient sufficiently long under treatment for any improvement to be apparent. Several cases with severe laryngeal involvement have also been treated with Tuberculin, with, I think, some slight improvement.

Disinclination to remain in hospital for a sufficient length of time appears to be one of the weakest points of treatment in industrial Sanatoria. Often the patients themselves consider that a week or two should be quite sufficient to bring about a complete cure of disease which has been progressing for years. Often, too, it is the unsatisfactory state of the home when the breadwinner is removed which compels return to work at the earliest possible moment, this moment being determined by the stress of home circumstances or the feelings of the patient rather than by the advice of the Physician.

Diet.

Considering the importance of food in the treatment of Tuberculosis, I have thought that it might be of some interest to include a copy of the daily menu for a sample week :—

	BREAKFAST	DINNER	TEA	SUPPER
SUNDAY	Porridge. Boiled Ham. Bread & Butter. Tea.	Roast Beef. Cabbage. Potatoes. Fruit Tart.	Bread & Butter. Cake. Tea.	Cold Beef. Bread & Butter. Milk Pudding. Cocoa.
MONDAY	Porridge. Bacon. Bread & Butter. Tea.	Boiled Mutton. Vegetables. Potatoes. Fig Pudding and Sauce.	Bread & Butter. Jam. Tea.	Soup. Bread. Milk Pudding. Cocoa.
TUESDAY	Porridge. Bacon. Bread & Butter. Coffee.	Roast Beef. Potatoes. Bread. Jam Roll and Sauce.	Bread & Butter. Lettuce. Tea.	Fried Liver. Bread. Milk Pudding. Cocoa.
WEDNESDAY	Porridge. Brown Bread and Butter. Tea.	Roast Mutton. Onions. Potatoes. Bread. Ginger Pudding and Sauce.	Bread & Butter. Jam. Tea.	Pea Soup. Bread. Milk Pudding. Cocoa.
THURSDAY	Porridge. Cold Ham. Bread & Butter. Tea.	Roast Beef. Potatoes. Bread. Milk Pudding.	Bread & Butter. Jam. Tea.	Hot Pot. Bread & Butter. Milk Pudding. Cocoa.
FRIDAY	Porridge. Eggs. Bread & Butter. Marmalade. Coffee.	Roast Mutton. Potatoes. Bread or Fish. Potatoes. Cabinet Pudding. Sauce.	Bread & Butter. Jam. Tea.	Lentil Soup. Bread. Milk Pudding. Cocoa.
SATURDAY	Porridge. Bacon. Bread & Butter. Tea.	Boiled Mutton. Potatoes. Marmalade Pudding and Sauce.	Bread & Butter. Jam. Tea.	Stewed Steak and Kidney. Bread. Milk Pudding. Cocoa.

Dentist.—So unsatisfactory was the condition of the patients' mouths, and the need of attention so great, that early in 1913 the Committee decided to appoint a Dentist. Dr. Preston was appointed, and took up his duties early in April, since when he has visited every fortnight, extracting carious teeth, scaling where necessary, and giving advice generally as to care of the teeth and hygiene of the mouth. Though excellent work has been done in this department, Dr. Preston's duties do not at present include stopping teeth in the earlier stages of decay, or provision of artificial teeth.

Laboratory Work.—This has been limited to the examination of sputum, urine, and in one instance cerebro-spinal fluid. 427 sputum examinations were made. Of these, 331 gave a positive result, and 98 a negative. Re-examination of those giving negative results in most instances resulted in the finding of the tubercle bacillus. Twenty-one, however, remained persistently negative. The majority of these, however, were clinically quite definite cases of consumption.

It may be of interest here to briefly survey the life of a patient from the period of his admission. Shortly after arrival he is seen by the Medical Superintendent or the R.M.O., and allocated to one or other of the receiving wards. Instructions which may be necessary as to bathing, diet, or special treatment prior to his thorough examination are given.

A careful examination is made on the day following admission, after which the patient is given special instruction as to precautions to be adopted, and presented with a copy of the Rules and Regulations. The patients are also seen periodically by the Senior Tuberculosis Officer (Dr. Sutherland). For the first three days he is detained in bed, and a careful record made of pulse and temperature. If these are found to be normal he is then allowed up for a few hours, this period being steadily increased, so long as there are no adverse symptoms, until the patient is up all day. From this period he enters one or other of the grades of work, which are as follows:—

Class I.—Walking exercise only—up to six miles daily, as directed.

Class II.—Sweeping, cleaning brasses, weeding, hoeing, painting, carrying baskets of earth or cinders of about 16lbs. weight.

Class III.—Sweeping, cutting edges of lawns, digging light ground, cleaning knives and shelters. Walking two afternoons weekly.

Class IV.—Small mower; rolling; wheeling barrows of grass, cinders, and earth; digging; scrubbing forms and tables. Walking two afternoons weekly.

Class V.—Large mower; digging heavy and unbroken land; joinering, trenching, or any heavy work.

It is a matter of regret that at the present time the patients are so poorly that our Classes IV. and V. have very few occupants. They rarely exceed six or eight, and on many occasions are only four or five.

Classes I., II., and III. include by far the greater number of the ambulatory cases, and these not infrequently take their discharge as soon as improvement really becomes marked, and they are qualifying for the higher grades. The number of patients on exercise in all of these grades never exceeds one-third of the total occupants of the Hospital. The daily number of wholly or partially bed-ridden patients is usually over 100, and has reached as high as 105. With

the opening of additional wards, I anticipate that the proportion of wholly and partially bed-ridden patients will fall, and, as a consequence, the number of "workers" will increase, thereby greatly facilitating the arrangement and control of this form of treatment. With the object of obtaining more supervision of the working and resting hours of the patients, it is my intention to bring before the Committee very shortly the suggestion that a special Officer be appointed to act as general foreman under the Medical Staff. This officer, who might with advantage be an ex-army man, would be required to be always amongst the patients, turn them out to their allotted tasks, see that they were couching at and for the time ordered, drill those who are considered fit, and attend them during their walking exercises. We have so far endeavoured to obtain this control from the patients themselves, one of whom has always acted as foreman. I cannot say, however, that this has proved entirely satisfactory. In a Sanatorium of this character, where two-thirds of the patients are in bed practically all day, the periodic visits paid by the Medical Officers during both working and resting times are of necessity at too long intervals to maintain efficient control. In all these grades the routine is as follows:—Wakened 7 a.m., temperature and pulse taken; then half-pint of warm milk is given, after which the patient gets up, washes and dresses, makes his bed, and generally helps to tidy the ward. At 8-30 breakfast is served in the dining hall. 9 to 9-30 patient may spend as he wishes, so long as he is ready for the doctor's visit at 9-30. From 10 to 11-30 he works, exercises, or couches, as may be ordered. 11-30 to 12-25, couching. He then prepares for dinner at 12-30. From 1-15 to 2 he may again amuse himself. 2 to 3-30, work as from 10 to 11-30. 3-30 to 4, rest on couch. 4 o'clock, tea. 5 to 7, recreation. At 6 p.m. temperature and pulses are taken. At 7 p.m. supper is served, after which patients begin to prepare for bed. At 8-30 all patients are in bed and the lights lowered.

If during the three probationary days there has been any rise of temperature, patients are kept in bed until this has absolutely settled, when they are allowed to proceed as above.

Unfortunately, with some of the more advanced cases the temperature never becomes normal; such patients are kept continually in bed, with the exception of short journeys in a wheel chair, when their condition allows of this.

So far as possible, all bed-ridden patients are moved into the open-air shelters during the daytime. The distance of the men's shelters from their wards renders this a matter of some difficulty, and only a few can be so dealt with.

During their stay, patients are instructed both by the medical officers and the ward sisters in the methods of taking their temperatures, the importance of any rise, and the necessity for reporting such rise immediately.

Originally every patient was provided with his own thermometer, and took and recorded his own temperature, but this had to be abandoned owing to the excessive breakage; the patients either could not or would not provide themselves with fresh thermometers to replace those broken by their own carelessness.

They are systematically instructed in personal precautions, and more especially in the method of using sputum box, sputum flask, and coughing papers.

The importance of exercise and rest, and the value of these as modes of treatment, is also impressed upon them; also the importance of fresh air, cleanliness, and the precautions to be taken on returning to their families to avoid all unnecessary risk to them and to the public generally.

Sputum.—It is well recognised that the source of infection in Pulmonary Tuberculosis is the sputum, and the fine particles of moisture discharged from the mouth in speaking, and particularly on coughing. Little can be done to prevent dissemination when speaking, but the amount discharged at these times is comparatively small. On coughing, however, there is a copious discharge of these fine germ-laden particles. The patients are, therefore, supplied with small squares of waxed tissue paper, which they are instructed to hold before their mouths when coughing, and then to crumple up and place in sputum box. Whilst in bed every patient is supplied with a varnished cardboard box, having a well-fitting lid, into which he spits, carefully replacing the lid after use. These boxes are changed night and morning, more frequently if necessary. On being collected, they are placed at once in large cardboard cases, capable of holding 18; these are then removed by the Hospital porter, and burnt in the destructor. For use when walking about every patient has a glass pocket flask; this is placed at bedtime in a tray, unopened as removed from the pocket, and a clean one taken for the following day. The used flasks are removed by the porter to the sputum house; here they are unscrewed over a tank of boiling water, and placed back into the tray. The tray and its contents are then immersed in the tank, and boiled for 20 minutes. This water is then allowed to flow away, the tank refilled, and boiled for 5 minutes; after this the flasks are rinsed in cold water, and are then ready for distribution next evening.

At the present time (June, 1914) the work of extending the Hospital is well in hand, and, although not strictly applicable to a report terminating in December, 1913, it will perhaps be permissible to briefly record the work undertaken, and the stage at which it now stands.

I. Dining Hall and Recreation Rooms.—This block was commenced in the early spring, with promise of completion in about three months. Progress has, however, been made much slower than was anticipated, and it is

probable that a further three months will elapse before it is complete. At present the walls are up and the roof timber in position, but there is a great deal of work still to be done.

II. The new block for male patients begun in May is now well in hand, and walls up to almost first floor level.

III. The new block for female patients has been commenced, the foundations are out, and the walls built to the ground floor, and the concrete floor laid.

IV. The foundations for the extensions to the Doctors' and Nurses' quarters, in connection with the administration block, are now being commenced.

V. The bathrooms in connection with Ward I. are also well in hand.

VI. The bowling green commenced in the spring is now nearing completion. This has proved a very slow matter. It has, however, now been levelled, cindered, and laid with turf. The surrounding walks have still to be made, and a good deal of levelling will be required after subsidence of the newly filled-up land. It will, of course, not be ready for occupation until next season.

Work still to be taken in hand.

(I) Extension to laundry.

(II.) Extension to engine house, and provision of accumulators.

(III.) Provision of laboratory and examination block.

(IV.) Extension of sewage plant.

I should like to draw particular attention to the two last, the need of which is very seriously handicapping the work of the Hospital.

I. *Laboratory.*—Examination Room and Theatre. There is so far no place except the small dispensary for any laboratory or bacteriological work to be undertaken, and here there is only a very poor supply of the necessary fittings. For examinations and minor operations there is nowhere but the wards, and it is most objectionable and undesirable that they should have to take place there. I would, therefore, again draw the attention of the Hospital Committee to the urgent need of this provision.

II. *Sewage.*—The need of a thorough overhaul and extension is a matter of the greatest urgency. It will be remembered that the present sewage plant was installed to deal with the sewage of a hospital of 100 beds and a proportionate staff. The present sewage plant is overworked, and, in my opinion, the treatment of the sewage now being disposed of requires attention. Further, I do not consider that any more patients can be admitted to the Sanatorium until a satisfactory scheme for dealing with the sewage is actually in operation. The new blocks should be ready for occupation by December 31st, 1914, at the latest.

CLAYTON VALE HOSPITAL.

Report for 1913.

The Hospital, primarily intended for the isolation of cases of Smallpox, has since 1904 been used for the treatment of Tuberculosis.

It stands in grounds over 5 acres in extent, consists of 5 separate blocks of buildings, and provides accommodation for 66 patients and a resident staff of 28.

(1) The male block contains three 4-bedded wards, three 2-bedded wards, and one single ward, together with a billiard room, dining room, and recreation room and library. It accommodates 19 patients.

(2) The female block, at the opposite end of the grounds, has accommodation for 22 patients, and consists of three 3-bedded wards, four 2-bedded wards, and one single ward. There is also a dining room and sitting room with library. The dispensary and laboratory are in this block.

(3) The children's block is a large single ward, 87 feet long by 27 feet wide, and holds 25 beds and cots.

(4) A separate block close by contains the children's recreation room and the schoolroom.

(5) The administrative block has a central situation, and affords quarters for the whole of the resident staff. The patients' meals are cooked here, and distributed to the various wards. The food is kept warm in the ward kitchens, but no actual cooking is done in the wards.

Fixed wooden shelters are provided near the male and female wards, and there are seats for the patients in favourable places about the grounds.

The adult patients are mostly suffering from Pulmonary Tuberculosis in an advanced stage, and, in determining the suitability of cases for admission, consideration is given to the degree of infectivity of the case and the necessity for isolation, as evidenced by bad home conditions, such as overcrowding. Since the Hospital was recognised by the Local Government Board on March 7th, 1914, for the treatment of insured persons suffering from Tuberculosis, a number of patients have been given treatment here as a form of Sanatorium benefit, when, for special reasons, it has been considered advisable to secure early admission to an institution.

The cases admitted to the children's ward are mostly early or doubtful cases. Many are the contacts of cases of advanced Tuberculosis, and are taken into hospital to remove them from sources of infection, or alleviate overcrowding at home. Cases of advanced disease in children are treated in the adult wards.

In May, 1913, a school was started for the children, and the Hospital, on the recommendation of the Education Committee, secured the services of Mrs. Wainwright as teacher. The school has proved very satisfactory, and since its commencement an improvement in the physical condition and general behaviour of the children has been noticed. There is an average attendance of just over 20 children, and from $3\frac{1}{2}$ to 4 hours a day are spent in school. In addition to reading, writing, and arithmetic, instruction is given in drill, singing, drawing, modelling, and nature study. On suitable days the school is held out of doors.

The adult patients receive individual instruction from the Medical Officer in respect of their conduct and the observation of precautions. With the large number of bedfast cases, this instruction is given on admission and discharge, and also at other times, as occasion determines.

Those patients who are sufficiently convalescent are prescribed graduated walks, and have light work to do in the garden.

Tuberculin is used as a means of treatment in suitable cases, and continuous inhalation is a routine form of treatment.

Patients when in bed are supplied with cardboard sputum boxes and cough papers. The boxes are painted with pitch inside to render them impervious to moisture, and after use are destroyed by fire on a special grate in a room set apart solely for this purpose in each of the adult wards.

When up, the patients use the ordinary sputum flasks. The flasks and their contents are sterilised by boiling for 20 minutes in a solution of soda.

The Hospital Staff consists of :—

Medical Officer.

Matron		6 Wardmaids
Caretaker		1 Cook
Housekeeper		2 Housemaids
9 Nurses		2 Kitchenmaids
4 Laundrymaids	Gardener	Porter.

The diet is simple, ample in amount, and the variety may be judged from the attached specimen adult dietary of a fortnight. (see pages 176-7.)

The cost for food is 7s. $1\frac{3}{4}$d. per head per week for patients and staff combined.

During the year 1913, 182 patients were under treatment in the Hospital, and the average length of time in Hospital for each case was 145·08 days.

There were 44 new admissions to the male wards and 65 to the female wards ; also 4 re-admissions of males and 5 of females. Of these, 40 females and 31 males were under 16 years of age.

The discharges numbered 115, and the deaths 7 males and 18 females.

With the class of case admitted the results obtained at the Hospital are satisfactory, and its function as a means of dealing chiefly with infective cases is fulfilled.

Mention should be made of the valuable services of those who have given their time to the religious requirements of the patients.

Thanks are also due to all who have sent gifts of books, clothing, etc., for the inmates.

RUPERT BRIERCLIFFE.

	8 a.m. BREAKFAST	12-30 p.m. DINNER	4-30 p.m. TEA	7-30 p.m. SUPPER.
SUNDAY	Ham, cold. Bread & Butter. Tea. (Special) Eggs.	Roast Beef. Chicken. Peas & Potatoes. Beef Tea. Rice Pudding. Jelly. Blanc-mange.	Tea. Bread & Butter. Cake. Toast. Syrup and Jam.	Beef Tea. Milk. Cake.
MONDAY	Eggs. Toast. Tea. Bread & Butter.	Roast Beef. Fish. Mince Meat. Potatoes. Cabbage. Rice Pudding. Jelly. Milk.	Tea. Bread & Butter. Cucumber. Marmalade. Treacle. Toast.	Porridge. Milk. Beef Tea.
TUESDAY	Porridge. Bacon. Bread & Butter. Tea. Toast. (Special) 6 Eggs.	Roast Mutton. Mint Sauce. Potatoes. Rice Pudding. Jelly and Beef Tea.	Tea. Potted Meat. Brown & White Bread & Butter. Cakes.	Porridge. Milk.
WEDNESDAY	Haddock. Brown & White Bread & Butter Tea.	Boiled Beef. Potatoes. Beef Tea. Rice Pudding. Rhubarb. Jelly. Milk. (Special) Fish and Mince Meat.	Bread & Butter. Tea. Fish. Tomatoes. Cakes. Bread and Dripping.	Milk. Beef Tea. Cold Beef. Bread. Cake.
THURSDAY	Tea. Bread & Butter. Eggs. Toast.	Fish. Roast Mutton. Potatoes. Carrots. Sago Pudding. Baked Apple.	Tea. Bread & Butter. Kippers. Syrup. Jam. Cake. Blanc-mange.	Hot and Cold Milk. Beef Tea. Cake.
FRIDAY	Tea. Bread & Butter. Fish. (Special) 4 Eggs.	Fish. Roast Beef. Potatoes. Cabbage. Jam Roll. Sago Pudding. Blanc-mange.	Brown & White Bread. Toast. Tea. Jam. Cheese. Cake.	Quaker Oats. Milk. Beef Tea.
SATURDAY	Tea. Bread & Butter. Toast. Bacon. (Special) 3 Eggs.	Hashed Meat. Potatoes. Rice Pudding. Jelly. Milk. (Special) Fish and Mince Meat.	Tea. Bread & Butter. Fish. Jam.	Milk. Beef Tea. Bread & Butter.

	8 a.m. BREAKFAST	12-30 p.m. DINNER	4-30 p.m. TEA	7-30 p.m. SUPPER
SUNDAY	Ham. Toast. Bread & Butter. Tea. (Special) 3 Eggs.	Roast Mutton. Chicken. Peas. Potatoes. Jelly. Boiled and Rice Puddings. Stewed Plums. Blanc-mange. Beef Tea.	Tea. Bread & Butter. Blanc-mange. Jelly. Cucumber. Seed, Currant, & Sponge Cakes.	Milk. Beef Tea. Bread & Butter. Cake.
MONDAY	Eggs. Toast. Bread & Butter. Tea.	Roast Beef. Potatoes. Rice Pudding. Jelly. (Specials) Fish or Mince. Milk.	Tea. White & Brown Bread & Butter. Cheese. Marmalade. Currant Cake. (Special) Eggs.	Beef Tea. Milk. Bread & Butter. Cake.
TUESDAY	Bacon. Bread & Butter. Toast. Tea. (Special) Eggs.	Roast Mutton. Potatoes. Boiled Onions and White Sauce. Rice Pudding. Rhubarb. Jelly. (Specials) Mince. Beef Tea. Milk.	Tea. White & Brown Bread & Butter. Toasted Cheese. Lettuce. Radishes. Marmalade.	Hot Milk. Beef Tea. Bread & Butter.
WEDNESDAY	Fish. Bread & Butter. Toast. Tea. (Special) 2 Eggs.	Boiled Beef. Potatoes. Rice Pudding. Jelly. Fish. Beef Tea.	Kippers. Tea. Jam. Bread & Butter.	Hot Milk. Beef Tea. Bread & Butter.
THURSDAY	Eggs. Lettuce White & Brown Bread & Butter. Toast. Tea.	Roast Beef. Potatoes. Cabbage. Rice Pudding. Jelly. Milk. (Special) Mince Meat.	Potted Meat. Toasted Tea Cakes. White & Brown Bread & Butter. Tea.	Beef Tea. Milk. Porridge.
FRIDAY	Bread & Butter. Porridge Fish. Tea. Toast. (Special) 2 Eggs.	Roast Beef. Potatoes. Rice Pudding. Jelly. (Special) Mince and Milk.	Tea. Bread & Butter. Marmalade. Biscuits. Currant and Seed Cakes.	Milk. Beef Tea. Bread & Butter.
SATURDAY	Porridge. Bacon. Bread & Butter. Tea. (Special) 6 Eggs.	Potato Pie. Haricot Beans. Rice Pudding. Jelly. (Specials) Fish. Beef Tea.	Tripe. Tea. Bread & Butter. Jam. Watercress.	Milk. Bread & Butter. Beef Tea.

At 5 a.m. and 10-30 a.m. each day the patients are given cocoa or milk.

REPORT ON THE ABERGELE SANATORIUM FOR THE YEAR 1913.

By Colin McK. Craig, M.D., D.P.H., Medical Superintendent.

The Sanatorium was first opened in April, 1912, by the South Manchester Board of Guardians for the treatment of early cases of Pulmonary Tuberculosis.

In the following July the Insurance Act came into force, removing from the sphere of the Guardians' administration all the Insured class.

Accordingly, negotiations were begun for the transfer of the Institution to the Manchester Corporation, and the transfer was made on the 1st April, 1914.

The building acquired for the Sanatorium being merely a mansion house, excellent of its kind, no very useful purpose will be served by describing it. Briefly, it provides accommodation for 13 male, 10 female patients, and 17 of a staff.

It is lighted by electric light, warmed by open fires and hot-water radiators, and the rooms are excellently ventilated, the majority of the patients' quarters opening on to verandas.

The Sanatorium is situated at an elevation of 230 feet above sea level. The estate extends over an area of 273 acres, of which 32 acres are sublet to a farmer, and about 70 acres of the remainder are farmed by the Sanatorium under the management of a farm bailiff.

Three night and five day shelters have been erected, there being at the present time shelter accommodation for 23 male patients.

Bathing water is obtained from two streams which run through the grounds, and a deep well on the estate provides drinking water.

An excellent power-house for the supply of electric light and steam has been provided, and a steam laundry, equal to the needs of 100 persons, will shortly be in working order.

Much work has been done on the estate during the last two years, roads have been repaired, the houses of the Superintendent and Farm Bailiff have been rebuilt, and many alterations made on the drainage and water systems.

Sewage is disposed of on the water-carriage system, the effluent passing to a septic tank, and thence to a streaming filter.

The outflow is finally distributed over ploughed land.

Rain and laundry water are treated separately.

The present capacity for sewage disposal is equal to the accommodation provided in the Sanatorium, but any future extensions would necessarily involve an addition to the sewage works.

The Institution having existed only for a short period, no useful purpose will be served by entering further into general administrative questions, but it may serve a useful purpose to lay before you certain facts which have been observed in the experience of the last two years.

The South Manchester Guardians intended the Sanatorium for the treatment and "cure" of early cases, residing in the area of the Township of South Manchester, or cases in which some economic advantage might be gained by treatment in the Sanatorium.

With that end in view, cases were examined by the Medical Superintendent before admission to the Sanatorium, a system which is only possible in a small Institution.

From April, 1912, to April, 1914, 332 cases were examined with a view to admission into the Sanatorium, consisting of 208 males and 124 females.

During the same period, 120 were admitted to the Sanatorium, 56 males and 64 females.

In 32 cases there was a marked family history.

There were six cases of husband and wife, one case of father and son, and another case of three sisters.

Adopting the "Turban Gerhardt" classification, which is the one that has been internationally adopted for statistical purposes, the cases were divided into stages, as follows :—

Stage I.—35 cases. Bacilli found, 40 per cent.
„ II.—43 „ } Bacilli found, 73 per cent.
„ III.—42 „ }

Percentage of cases examined :—

Stage I.—10·5 per cent.
„ II.—23·5 „
„ III.—66·0 „

The after history has been obtained of 32 cases which have been discharged from the Sanatorium from 12 to 18 months.

Stage I.—10 cases. All well and working.
„ II.—11 „ Six working, five relapsed.
„ III.—11 „ Eleven dead.

The results obtained in Stages I., II., and III. are in accordance with what is the universal experience.

These figures show in a striking way the unsuitability for treatment on ordinary Sanatorium lines of the great majority of the patients drawn from the working class who are suffering from Pulmonary Tuberculosis.

It may be argued that these cases were not Insured cases, and that we may reasonably expect a larger proportion of early cases among the Insured class.

In point of fact, I do not believe that such will be found to be the case.

The 330 applications included a fair proportion of the Insured class; and of the uninsured, quite a fair proportion was composed of a superior type of patient—for example, school teachers.

Tuberculin.

The tuberculins we have used have been P.T.O. and T.O. Burroughs Wellcomes' products.

Twenty-four hours previous to injection the patient's temperature and pulse were carefully noted.

The injections were given at intervals varying from five to eight days; reactions, as far as possible, were carefully avoided.

Following the injections, patients are kept on rest for 24 hours, temperature and pulse being carefully recorded.

As illustrating the difficulty in estimating the value of tuberculin in treatment, I quote the following cases :—

Case I.—M.S. No T.B. found, no definite physical signs, history of hæmoptysis, weakness and loss of weight, very sensitive to tuberculin. October 4th, ·0001 P.T.O. February 4th, 1 cc. P.T.O. Weight on admission, September 12th, 7st. 10lbs. Weight on discharge, March 19th, 9st. 7lbs. The tuberculin caused no ill effects, and this patient is now on the domestic staff.

Case II.—K.W. Laundress. T.B. found in the sputum, physical signs in the right upper lobe. Weight on admission, May 19th, 9st. 6lbs. Weight June 25th, 10st. 1lb., ·0001 P.T.O. Weight July 27th, 10st. 2lb., ·05 P.T.O. The temperature became very irregular, injections were discontinued at the end of July. The temperature did not settle until the end of August. Weight 9st. 9lbs. The patient now steadily gained weight, lost all cough and sputum. March, 1914, capacity for full domestic work. No bacilli, no cough. Clearly a case in which tuberculin converted quiescent disease into active, and did harm.

Case III.—B.C. Severe lesion right upper lobe, some chronic bronchitic signs in both lungs. Admitted January 31st, 1913. Weight 7st. 8lbs. Discharged August, 1913. Weight 10st. Working capacity, equal to full domestic duties. This patient took tuberculin extremely well, and is the only patient I have had who was eager to have the injections, "and always felt better." A course up to 1 cc. of P.T.O. followed by a course of T.O. to 1 cc. On August 30th, 1913, she looked the picture of health, and with great difficulty a pellicle of sputum was obtained. Examination showed numerous Tubercle Bacilli to be present. The case was examined six months after leaving the Sanatorium, she was still having tuberculin injections, had lost much weight, and there were physical signs of active disease.

Case IV.—J.M. Nurse on the staff of the Sanatorium. Exposed largely to tuberculous infection during four years of hospital life. Suffered from periodical attacks of Asthma during the last two years. The attacks were very frequent and very distressing. January 10th, 1913, ·0001 cc. P.T.O. given. A violent reaction resulted. The patient was so sensitive that by the end of March only ·006 was reached. No further attack followed after January 31st. During the three months the patient gained 4lbs. Immunity from attack lasted until the end of June, when a slight attack occurred. During July, tuberculin injections resumed, and the last dose given was ·05 P.T.O. This case left the Institution at the end of July. She was seen six months later, had gained 10lbs. since leaving, and been free from Asthma.

Case V.—J. W. Treatment with tuberculin had to be abandoned owing to the severity of Asthmatical attacks which followed the injections.

Case VI.—H. F. No definite physical signs of disease. History of Asthma recurring every few days during the last four years. Gained steadily from admission. Was free from Asthma during stay in Institution. Weight August, 1913, 6st. 5lbs. Discharged February, 1914. Weight 8st. 5lbs. No tuberculin given.

The number of patients to whom I have been able to give a course of tuberculin, extending over a period of eight to nine months, has been too small to furnish statistical results of any value, though it is strongly to be doubted whether tuberculin statistics are ever of any value.

As a writer says in a recent defence of tuberculin, Therapeutic conviction is of more importance than statistical evidence.

I am bound to say that, so far, I have failed to convince myself that tuberculin is of any great value in the treatment of Pulmonary Tuberculosis. In face of all that is claimed for it, I confess to a feeling of intense disappointment.

One cannot help feeling that it is largely a case of "Faith is the substance of things hoped for, the evidence of things not seen."

Artificial Pneumo-Thorax.

During the last seven months I have been giving a trial to the treatment of Pulmonary Tuberculosis by the induction of an artificial pneumo-thorax.

It is rapidly coming to the front at the present time, and as I believe there is a future in store for this treatment, an account of the operation and a résumé of the present position will not, I trust, be without use.

The underlying principle of the treatment is the application of complete rest to the affected lung through the collapse induced by the injection of gas into the pleural cavity.

According to Adams, the treatment originated with an English physician (Carson) in 1821, but little notice was taken of his suggestion in this country.

Forlanini, of Pavia, refers to it in 1882, and perhaps to him more than to any other living man is due the credit of placing the treatment on a sound basis.

Murphy, of Chicago, published some successful results in 1898, and described his apparatus.

Saugman, of Copenhagen, and Brauer and Spengler among continental observers, have also done much pioneer work.

The technique which I adopt is as follows :—

The patient is given one-sixth of a grain of morphia half-an-hour before the operation. In spite of some adverse criticism, I believe this to be a sound practice.

The patient lies on the sound side, with a pillow under the lower ribs. The arm is raised above the head, and a spot is selected over sound lung, as far as one can tell, free from adhesions.

The skin is painted with a 3 per cent. solution of iodine in absolute alcohol.

A 1 per cent. solution of novocain is injected under the skin into the muscles, and as far as possible into the parietal pleura.

Having filled our nitrogen bottle with gas, with a small Grafe knife we puncture the skin, and now push the needle along the track of the hypodermic needle into the pleural cavity, carefully watching the manometer.

The moment the needle enters the pleural cavity oscillations of negative pressure at once appear, recording from 3 to 8 cc. of water.

We now push home the stilette into the needle, serving a double purpose, clearing the eye and examining for blood.

If the stilette be bloodstained, it is advisable to test further for blood by attaching a syringe.

A strict watch must be kept upon the patient.

At the first operation it is advisable to inject only a small quantity of gas, 300/400 cc.

The patient's confidence has to be gained, and one must be very careful not to cause pain and dyspnoea at the first operation.

Pain is particularly liable to occur at the first injection if adhesions are present and if much gas is injected.

A second injection is given on the third day, the quantity varying with the patient, 800/1,500 cc. being injected.

A third injection four days later, and a fourth a week later, and so on. At the end of three months ten or twelve injections have been given.

The operation has only in the last three or four years gained ground with us. Vere Pearson, Claude Lillingstone, Morriston Davis, and Carl Woodcock being among the earliest pioneers in this country.

Under normal conditions a negative pressure exists in the pleural cavity, three to eight centimeters of water, the pressure rising with expiration and falling with inspiration.

When gas is injected into the pleural cavity of, *e.g.*, the right side, collapse and retraction of the lung follow.

The completeness of the collapse depends, in the absence of pleural adhesions, upon the frequency of the gaseous injections and the pressure maintained in the pleural cavity.

A slight positive pressure of about 2/4 cc. of water on expiration will insure in most cases complete collapse of the lung.

The heart is pushed over to the opposite side, the degree to which this occurs depending mainly on the pleural pressure and rigidity of the mediastinum.

Dyspnoea of varying degree results from the changed condition, leading to increased cardiac activity and deeper respiratory movements.

The sound lung in a short time develops compensatory changes in the direction of an increase of respiratory volume.

Owing to the increased work thrown on the right side of the heart, and cardiac displacement, palpitation at first may be troublesome, but compensation is soon established.

An X-ray photograph in a successful case will show the lung reduced to a mere ribbon of tissue, lying along the vertebral column, moving very slightly with respiration, the diaphragm displaced downward on the affected side, the heart pushed over to the opposite side.

Clinically one finds very marked diminution of sputum, in successful cases very soon complete cessation.

Generally, with the first injection, the temperature rises, the rise lasting two to three days.

The temperature then settles down to a permanent line running through normal.

This statement is true of advanced cases ; in moderately early cases the rise is very temporary, and may be absent.

The pulse generally increases slightly in rapidity, but at the end of the injections there is a noticeable increase in volume, and some sweating may occur.

The gas chosen for injection is nitrogen, it being only slowly absorbed by the pleural membrane.

Much apparatus has been devised for injecting the nitrogen ; Forlanini, Saugman, and many others, having described forms of the apparatus.

They all agree in consisting of two graduated glass vessels, connected by tubing with each other, and with a manometer.

One vessel is filled with nitrogen, the other with some disinfecting fluid, *e.g.*, 1 in 2,000 Hg., the nitrogen being forced through a hollow needle into the pleural cavity either by air pump or water pressure.

The apparatus which I have used is a modification devised by Dr. Carl Woodcock, of Leeds.

It answers the purpose excellently.

A special feature of this apparatus lies in the nitrogen being obtained direct from the atmosphere.

Air is drawn through a strong alkaline solution of Pyrogallic Acid, the oxygen and $C.O_2$ being consequently absorbed.

The apparatus consists of two graduated glass bottles, 600 cc. capacity, connected by rubber tubing.

A two-way tap connects the nitrogen bottle with a water manometer having a seal of 10 inches, and with the needle in the pleural cavity.

The tap can be adjusted so that the pleural pressure alone is registered, or when nitrogen is being injected, so that the needle is connected both with the nitrogen bottle and the manometer.

Once the collapse is well established, injections are required at rare intervals.

The puncture method described is the one generally adopted in this country.

On the Continent the open method is mainly followed.

An incision is made through the skin and muscles down to the parietal pleura, which is then punctured by a needle or trocar.

The advantage of this method is that one knows with certainty where the needle lies.

The disadvantages of the open method are that it is a more formidable undertaking, the dangers of sepsis are greater, and surgical emphysema is of frequent occurrence.

With efficient apparatus and careful technique, the puncture method is, in my opinion, much to be preferred.

Indications.

The usual indications given at the present time are :—

1. Extensive disease confined to one lung.

2. Disease so severe and widely spread in the lung that healing is improbable under ordinary methods.

3. Cases which are advancing in spite of treatment.

4. Pulmonary Hæmorrhage, when the side from which the hæmorrhage comes is known, and the other side is comparatively sound.

Disease of the opposite lung not extending below the spine of the scapula is not considered a contra indication.

Dangers.

Pleural Shock.—Most liable to occur at the first injection; not likely to occur if the gas is warm, and morphia given beforehand.

Personally, I have not yet seen it, and have given over fifty injections.

Secondly.—Surgical Emphysema, which is only dangerous when the gas invades the mediastinum.

This danger is avoided by strict observation of the manometer.

If the manometer does not show oscillations of 3 to 8 cc. of water the gas under no conditions should be injected.

Slight oscillations are seen when the needle pierces the lung or is embedded either in dense adhesions or is pressing against the outer surface of the parietal pleura.

Thirdly.—Embolism, which is chiefly liable to occur in old standing cases with dense adhesions.

This mishap, although of rare occurrence, is liable to occur if the needle enters some vein, the walls of which are held widely open by adhesions.

The needle should always be examined for blood by the use of the stilette and syringe.

Some inject as a precautionary measure 50/100 cc. of oxygen.

Oxygen is readily absorbed, and the danger of serious results is somewhat lessened.

Personally, I am not much impressed with the value of oxygen injections.

Fourthly.—Injury to the lung.

Complications.—The chief complications appear to be pleuritic effusion.

The cause of the effusion is obscure, some observers find it arising in 50/60 per cent. of the cases. In others it is a very occasional experience.

It may arise six to twelve months after injection.

Whether the effusion is tubercular in origin, or whether it is due to faulty technique, or to some alteration in the pleural membrane, is not yet clear.

All agree, however, that the complication is not serious, the effusion being simple and readily absorbed.

The treatment seems to be to draw off the liquid and inject more gas.

Pain.—Cardiac in origin of varying degree.

The pain in severe cases is described as being very similar to Cardiac Angina.

It is not liable to occur if the amount of gas is only gradually increased and sudden and excessive displacement of the heart avoided.

Advantages.—The value of rest in the treatment of Tuberculosis has long been universally recognised: the results obtained in surgical Tuberculosis, the comparatively favourable prognosis in cases of Pulmonary Tuberculosis, in which the primary onset is Pleurisy with effusion, are eloquent testimony to the importance of rest.

Pneumo-thorax is a method by which absolute rest can be given to the lung.

2. *Reduction in infectivity.*—Cessation of expectoration and disappearance of bacilli speedily follow in cases where a successful pneumo-thorax has been induced.

3. The patient can, within a comparatively short period, resume his work under favourable conditions so long as the pneumo-thorax is maintained.

4. There is abundant evidence to prove that the healthy collapsed lung will re-expand when the injections are discontinued.

The Value of X-Rays.

It is important and very desirable that the lung should be submitted to X-ray examination previous to the operation, and the injections controlled by occasional examination on the X-ray screen.

Much difference of opinion exists as to the value of X-ray photographs in cases of Pulmonary Tuberculosis.

I have had a number of cases examined by Doctors Bythell and Barclay, and compared their reports with my clinical records.

The experience has been that the X-ray in many cases showed the disease to be more widely spread than clinical examinations led one to expect.

There was, however, a close agreement between the two.

To show the extent of lung involved, to reveal the presence of adhesions and control the nitrogen injections, the X-ray is a most valuable help.

However, I am not convinced that the X-ray is of value in determining the question whether the disease is quiescent or active.

Further observation is required on this point, and I hope to speak more definitely in a future report.

In considering the relative advantages of different methods of treatment, one has to take into consideration the type of patient with which we have to deal.

There is no doubt that, firstly, the early cases form a very small proportion among the working class, certainly in Manchester not more than 10 per cent.

Further, the cases treated on ordinary sanatorium lines are almost certain to relapse, within the comparatively near future, if they return to the conditions under which the working classes have to spend their lives in a town like Manchester.

Not only are the housing conditions bad, but wages are poor, and the patients are neither sufficiently educated, self-denying, nor persevering enough to help themselves, except under strict supervision.

Under these conditions, it appears to me that an artificial pneumo-thorax is likely to prove of great service.

A procedure which I hope will be given a thorough trial is as follows :—

Pneumo-thorax to be induced in all cases where there is no contra indication. The cases to be X-ray'd and sent down to a sanatorium for three months' treatment.

All the initial stages should be carried out in an institution.

The patient's general health will greatly benefit, and in this time a more or less permanent degree of collapse will be attained.

Three months will allow time for the patient to be discharged with a lung which will only require an occasional injection of gas, at intervals varying from six weeks to three months, for the lung to be maintained in a condition of absolute rest.

The refills to be given at the dispensary.

Those patients whose work is not very laborious will be able to follow their occupation without any inconvenience, but where heavier work has to be undertaken a longer period must be allowed to train the heart and sound lung to meet the strain.

Further experience is required before one can form a conclusion as to the degree of manual labour which is possible under the changed circumstances.

One case, a stonemason by trade, is now able to follow his occupation with very slight inconvenience, a pneumo-thorax having been maintained for over five months.

This man has done four hours a day breaking road metal, and can use a scythe with comfort. An X-ray examination at the present time shows complete collapse of the right lung.

Case I.—E. H. Laundress. T.B. in the sputum. X-ray showed fine infiltration spreading from the root into the lower lobe of the left lung. Physical signs of infiltration of a small area in the left lower lobe. Signs did not clear, and the patient had a relapse after four months' sanatorium treatment,

with temperature, cough, pains in the side, etc. Pneumo-thorax induced, ten injections given from beginning of December to end of February. The injections were then discontinued, as the patient found a very suitable occupation. The patient at the present time is in the best of health, and equal to full domestic duties. No cough, no sputum. The lung has now expanded to a considerable degree, although a partial pneumo-thorax is still present.

Case II.—J. O'D. Stonemason. A large quantity of purulent sputum. T.B. present in large numbers. Physical signs of gross infiltration of posterior border of the right lung, extending from the level of the first dorsal spine to a point midway between the spine and inferior angle of the scapula. X-ray confirmed the clinical estimate. Pneumo-thorax induced January 2nd, 1914. X-ray showed a completely successful result.

The present condition, May 16th :—

> Physical signs of complete pneumo-thorax. Weight 10 st. 10 lbs. Working capacity equal to following his occupation. No sputum, no cough, steady temperature.

Case III.—T. W. Tobacconists' Assistant. Admitted in January, 1912, with severe disease, right upper lobe. T.B. in sputum. Discharged five months later much improved, and went back to his occupation. Re-admitted February, 1913, with Pyrexia, large quantity of sputum, and with disease involving three lobes of the right lung, and the left upper lobe to the spinal scapula. Irregular pyrexia, temperature remained irregular for months. Pneumo-thorax of the right side induced in November. X-ray showed a considerable degree of lung collapse, the pleural cavity being crossed by an isthmus of lung tissue, fixed to the chest wall by pleural adhesions. Eleven injections were subsequently given. *Result :* The temperature fell to normal, after a slight rise for the first week. There was a marked diminution in sputum. Patient said he felt very well, but a little short of breath, and was able to enjoy Christmas. January 30th, 1914. Severe pain, an enlargement of the right kidney, sharp rise in temperature. The patient was transferred to hospital, the complication rendering the position hopeless.

The case, though finally disappointing, was instructive.

A partial pneumo-thorax in an advanced case changed a bed-ridden pyretic cough-worn patient into a comparatively happy comfortable being, able to take gentle exercise, and find some enjoyment in life.

Case IV.—E. F. After five injections treatment was abandoned. X-ray examination showed a free pneumo-thorax on the right side, although the whole lung was extensively diseased. It also showed wider infiltration in the posterior border of the left lung than was suspected after clinical examination.

Case V.—J. T. Shop assistant. T.B. in the sputum. Admitted into the Sanatorium in April, 1912, with a localised infiltration of the right upper and middle lobe. Six months under treatment. Re-admitted February 23rd, 1914, with pyrexia, cough, etc. X-ray examination showed infiltration of the right upper, middle, and lower lobes, broncho pneumonic in type. Pneumo-thorax induced 4th March, 1914. Eight injections have been given at the present time. May 16th, the present condition is as follows :—

The patient looks the picture of health, and is able to do light domestic work, and walks on the level without inconvenience.

The X-ray photograph shows a complete pneumo-thorax to the right side. So complete has been the lung collapse that the lung, reduced to a mere band of tissue lying in front of the vertebral column, is not visible on the photograph.

I might further add that this case had a full course of Beranecks Tuberculin, and subsequently had much tuberculin both at the Crossley Sanatorium and Hardman Street.

I see no reason why this case should not be able to follow shortly her occupation, and, so long as the pneumo-thorax is maintained, relapse is very improbable.

Case VI.—J. L. Baker. Infiltration of the right upper, middle, and apex of the lower lobes. Symptoms : Cough, hæmorrhage, and sputum. T.B. was found. Pneumo-thorax induced April 30th, 1914. Four injections have been given. X-ray shows a considerable degree of pneumo-thorax. The upper lobe is partially adherent to the chest wall.

The patient shows a remarkable improvement, and in a future report I hope to give the after history of this case.

Case VII.—J.M. "Toffee Taster." T.B. in the sputum.

Treatment in this case was impossible owing to extensive adhesions.

The present position of Pneumo-thorax.

At the present time pneumo-thorax is induced chiefly in advanced or otherwise hopeless cases.

Abundant evidence has been published of good results being obtained in a certain proportion of these cases, the improvement in some cases being temporary and in others permanent.

Spengler, Murphy, Forlanini, and others, have published statistics showing good results from the treatment.

However, when one considers how widely the cases in which the treatment is tried differ in the extent and character of the lesion it is evident that statistical evidence at the present time must be of little value. Experience alone must be the deciding factor.

Pneumo-thorax is based on a sound theory; with good technique, and in careful hands, the danger attending the operation is very slight.

Also, the earlier the case, the less the danger.

A Word of Caution in Conclusion.

Firstly, great care must be taken in the selection of cases, and X-ray assistance in this matter is very desirable.

Secondly, the treatment in the early stages should be carried out in an Institution, by choice a Sanatorium.

Finally, it is not a method of treatment to be recommended for trial in private practice.

Laboratory.

The work here has necessarily been more or less of a routine character.

The sputum of patients is examined on admission and discharge.

Bacilli were found in 85 out of 120 cases.

Grade I. 35 cases. 14 with bacilli in the sputum.

All negative cases after several examinations by the Ziel Nielson method are examined by the antiformin method, and if still negative by the method of Ellerman and Erlandson.

My experience has been that the Ziel Nielson gives very good results.

The antiformin method has given positive results in several cases which were negative examined by the Ziel Nielson method.

The Ellerman and Erlandson method has not yet given a positive result where antiformin and Ziel Nielson were negative.

Cultures of tubercle bacilli have been obtained from sputum in three cases by the use of antiformin and glycerine egg medium, perceptible growth being obtained in from eight to ten days.

Three attempts gave three positive results.

When time is available it may be worth while testing negative sputum with the culture method.

Repeated washing in sterilized saline is said to give even better results than the use of antiformin.

The value of Sanatorium Treatment.

In view of the criticism which is being passed upon the value of sanatorium treatment at the present time, a few words on this subject may be desirable.

I. Sanatorium treatment will restore permanently the working capacity of the patient in about 10 per cent. of the cases.

II. Sanatorium treatment plus pneumo-thorax may, and I have hope that it will, raise the percentage to 30 or may be 40 per cent.

III. The remainder merely derive temporary benefit.

IV. The educational value of the treatment is admitted.

The problem of Tuberculosis is mainly a problem of advanced cases. Ninety per cent. of the patients when they first come under the notice of the authorities are cases of advanced disease.

They are sources of grave danger to the community months and years before they are diagnosed, and isolation at a late stage, in hospitals or colonies, is tantamount to "locking the stable door after the steed has gone."

Apart from considerations of sanitation, housing, etc., the problem of Tuberculosis will remain unsolved so long as the diagnosis of the disease is deferred until the advanced stage is reached.

Could we eradicate any other infectious disease under similar circumstances ?

The hope for the future seems to me to lie in :—

1. Education of the public to recognise the serious possibilities of slight cough, Hæmoptysis, etc.

2. Improved diagnosis on the part of the profession.

In conclusion, let me state my conviction that the Sanatorium is an invaluable and indispensable factor at the present time in the campaign against Tuberculosis.

REPORT BY MR. A. T. ROOK, SUPERINTENDENT OF THE SANITARY DEPARTMENT.

Sanitary Department,
Town Hall, Manchester.

In presenting to the Medical Officer of Health the report of the work transacted in the Sanitary Department for the year ending 31st March, 1913, I beg to state that the City, for inspection and other purposes, is divided into 33 Districts, to each of which one Sanitary Inspector has been assigned.

In addition to these, there is a Superintendent, one Chief Inspector, two Drainage, five Smoke, one Canal Boats, two Lodging-house, three Adulteration of Food, one Milkshops, six Factory and Workshops Inspectors, including two Female Inspectors, and two Drain Examiners. There is also a staff of 27 Clerks for clerical and other work.

In the House Drainage Department there is also a Manager, ten Clerks and eight Clerks of Works for supervising and measuring up work done by the contractors employed by the department in carrying out private drainage work.

The number of complaints of nuisances of various kinds made during the year was 4,027 :—

1,666 through the Medical Officer of Health's Department.
2,344 by the public.
17 through the Police.

HOUSES LET IN LODGINGS.

Under the powers given by Section 90 of the Public Health Act, the bye-laws made thereunder have been enforced.

The number of houses on the register is 1,920. To these, 9,683 day visits and 364 night visits have been paid. 126 infringements of the regulations have been reported and dealt with.

DAIRIES, MILKSHOPS, AND COWSHEDS REGULATIONS.

Under this Order, which was made in July, 1879, and the Regulations thereunder in 1896, 3,321 milkshops and dairies and 67 cowkeepers are now on the register. The number of cows kept is 951. The number of visits to dairies, milkshops, and cowsheds was 2,302. Twenty-nine infringements of the regulations have been reported and dealt with.

The number of ice cream manufacturers on the Register is 751. The number of visits was 965. Two infringements of the regulations have been reported and dealt with.

WORKSHOPS, BAKEHOUSES, SHOPS ACTS, AND ORDERS MADE THEREUNDER.

Workshop Acts

During the year the Factory and Workshop Act of 1901 has received the careful attention of the 4 Male and 2 Female Inspectors specially appointed for the duties, the Female Inspectors devoting a large portion of their time to visiting the 3,093 houses of outworkers in the City.

Means of Escape in case of Fire

Provision for the means of escape in case of fire in factories and workshops has also received attention, and all known cases of danger dealt with.

Periodical changes will, of course, from time to time take place in various ways which will bring buildings within the meaning of the Act, and necessitate the constant supervision of the Inspectors and action on the part of the Authorities.

Bakehouses

The number of bakehouses in the City is 563; of these 56 are situate in basement premises, and special attention has been given to them.

Shops Act

The Shops Act, which came into force on the 1st May, 1912, has received attention, registers of all shops having been prepared. Orders of Exemption from compulsory closing have been made in 25 trades, and in two cases Orders fixing the day for closing have been made after the opinions of the occupier of the several classes of shopkeepers had been ascertained.

Outworkers

Many visits have been paid to houses in various parts of the City in which out-work is carried on, as will be seen on reference to the following tabulated statement, but constant visitation is necessary to maintain the standard of cleanliness which is to be desired, especially in houses in which shirt-making, handkerchief-hemming, brace-making, and umbrella-covering, etc., is done.

The people, as a rule, appear willing to carry out any suggestion made by the Inspectors to keep their houses clean; but at the same time it is almost impossible for small houses, sometimes containing large families, to be kept in such a satisfactory condition as workshops.

The work done under the above Acts is shown in the following tables:—

Number of District.	INSPECTOR	SHOPS				WORKSHOPS					Factories and Workshops not provided with proper means of escape in case of fire	BAKEHOUSES					OUT-WORKERS	
		Number visited	Number of Infringements of Act reported	Number registered during the year	Number struck off register during the year	Number visited	Number of premises in which the Sanitary arrangements were found defective	Number of reports referred to H.M. Inspector of Factories (unregistered factories, &c.)	Number registered during the year	Number struck off register during the year		Number visited	Number of premises in which the Sanitary arrangements were found defective	Number of reports referred to H.M. Inspector of Factories	Number registered during the year	Number struck off register during the year	Number of visits to houses where out-workers are employed	Number of houses found dirty.
1	Richard Tolson	2453	18	91	94	1963	184	24	103	65	14	229	15	...	3	2	...	...
2	Thos. Partington	2372	6	116	138	1403	80	22	81	40	8	425	1	...	8	6	...	...
3	George Vernon	2651	17	193	158	1859	177	20	126	102	15	460	54	...	7	7	...	...
4	Francis J. Rowe	2605	42	165	203	2123	176	36	120	95	4	491	41	...	8	4	...	...
...	(Miss) Emma Coppock	2732	13	22	11	1380	99	...	5	13	...	...	...	...	...	...	1540	78
...	(Mrs.) Rosa G. Clift	2682	5	44	26	569	25	...	...	4	...	...	...	...	...	...	4414	11
	TOTALS.....	15495	101	631	630	9297	741	102	435	319	41	1605	111	...	26	19	5954	89

Totals on Registers—Shops, 19,312; Workshops, 4,426; Bakehouses, 563.

SHOWING THE NUMBER AND CLASSIFICATION OF PERSONS EMPLOYED AS OUTWORKERS BY FIRMS WITHIN THE CITY, AND THE NUMBER OF SUCH FIRMS.

TRADES	No. of Employers	No. of Outworkers or Contractors employed
Makers of Wearing Apparel	459	2786
Button Carding	1	3
Cabinet Makers and Upholsterers	5	18
Cleaning and Washing	1	1
Fent Sorters	3	11
Fur Workers	1	6
Hair Pad and Frame Makers	1	1
Handkerchief Hemmers	23	297
Lace, Lace Curtains, and Nets	2	12
Opticians	1	1
Paper Bags and Box Makers	3	5
Quilt, Cushion, &c., Makers	4	34
Umbrella Trimmers	24	272
Window Blinds	1	1
Totals	529	*3448

* 3093 of these are in the City, the remainder are in the districts of other Local Authorities, to whom lists showing the names and addresses have been sent.

SHOWING THE PROCEEDINGS TAKEN UNDER THE PROVISIONS OF THE ADULTERATION OF FOOD AND DRUGS AND THE MARGARINE ACTS.

Article	Number of Samples obtained	Number Adulterated	Number not Adulterated	Number Summoned before Magistrates	Number Fined	Number ordered to pay Costs only	Number Dismissed or Withdrawn	Amount of Fines Imposed	Amount of Costs ordered to be Paid
Arrowroot and Corn Flour	21	...	21	...	...	...	...	.....	.....
Baking Powder	17	...	17	...	...	...	...	.....	.....
Beef Dripping	1	...	1	...	...	...	...	.....	.....
Beer	82	...	82	...	...	...	...	.....	.....
Bread	44	...	44	...	...	...	...	.....	.....
Butter	431	7	424	3	3	...	...	4 1 0	4 8 6
Camphorated Oil	5	...	5	...	...	...	...	.....	.....
Castor Oil	7	...	7	...	...	...	...	.....	.. ...
Cheese	47	...	47	...	...	...	...	.....	.....
Cocoa	42	...	42	...	...	...	...	.....	.....
Cod Liver Oil	7	...	7	...	...	...	...	.....	.....
Coffee	117	3	114	2	2	...	...	1 2 6	1 2 0
Confectionery	66	...	66	...	...	...	...	.....	.....
Cream	12	...	12	...	...	...	...	.....	.....
Drugs	98	...	98	...	...	...	...	.....	.....
Fish (tinned and prepared)	5	...	5	...	...	...	...	.....	.....
Flour	49	...	49	...	...	...	...	.....	.....
Honey	1	...	1	...	...	...	...	.....	.....
Jams	29	...	29	...	...	...	...	.....	.....
Ketchup and Sauces	9	...	9	...	...	...	...	.. ...	.....
Lard	94	...	94	...	...	...	...	.....	.....
Margarine	42	...	42	...	...	...	...	.....	.....
Meat (tinned and prepared)	14	...	14	...	...	...	...	.....	.....
Milk	1177	55	1122	54	35	1	18	81 16 0	59 5 4
Milk (skimmed)	2	1	1	1	1	...	...	1 0 0	0 19 6
Mineral Waters, Cordials, &c.	40	...	40	...	...	...	...	.....	.....
Mustard	19	...	19	...	...	...	...	.....	.....
Oatmeal	28	...	28	...	...	...	...	.....	.. ...
Pearl Barley	11	...	11	...	...	...	...	.....	.....
Pepper	42	...	42	...	...	...	...	.....	.....
Pickles	6	...	6	...	...	...	...	.....	.....
Rice, Tapioca, &c.	50	...	50	...	...	...	...	.....	.....
Shrimps	2	...	2	...	...	...	...	.....	.....
Spices	36	...	36	...	...	...	...	.....	.....
Spirits	257	2	255	1	1	...	...	2 0 0	0 19 6
Tea	71	...	71	...	...	...	...	.....	.....
Treacle and Golden Syrup	14	...	14	...	...	...	...	.....	.....
Vegetables (tinned)	1	...	1	...	...	...	...	.....	.....
Vinegar	12	...	12	...	...	...	...	.....	.....
Wines	14	...	14	...	...	...	...	.....	.....
Totals	3022	*68	2954	61	42	1	18	89 19 6	66 14 10

* In 7 of these cases no Magisterial proceedings were taken, 4 informally taken, 1 cautioned by Committee, and 2 cases of Butter were declared to be Margarine.

In addition to the above, 562 samples of Milk have been procured from Farmers' cans by the Sampling Officers for bacterialogical examination under the Milk Clauses of the Manchester General Powers Acts.

Fertilizers and Feeding Stuffs Act, 1906.

Fourteen samples were procured under this Act, which were submitted to Professor Delépine for analysis, two of which were reported on as adulterated.

SMOKE NUISANCES.

For the abatement of smoke nuisances, the five Inspectors appointed specially for this work have taken 615 timed observations of half-an-hour each, with the result that 37 notices for the abatement of nuisances have been served. Proceedings before the Magistrates have been ordered in 110 cases out of 179 offences reported. These cases were disposed of as follows :—

One hundred and six were summoned before the Justices, in 85 of which fines were imposed amounting to £192 2s., and costs £42 18s. 6d. Three were ordered to pay costs only.

Seven orders of abatement were granted and served, 11 cases were excused, dismissed, or withdrawn, and 4 cases were pending.

Much attention during the past year, as will be seen by the above, has been given to the nuisance caused by the emission of black smoke, not only from the furnaces connected with boilers in mills, warehouses, and other works, but also from chemical and other industries, and the efforts made have already resulted in a considerable reduction of the nuisance.

Magisterial proceedings have been taken against a firm situate in an adjoining Authority in regard to smoke nuisances committed in their district, and penalties were imposed in four cases.

CANAL BOATS ACTS.

The number of canal boats on the register is 398.

The number of inspections made was 1,971, resulting in one infringement of the Acts being discovered, which was referred to the Justices to be dealt with.

Caution notices were sent to the owners or masters of 60 boats.

OFFENSIVE TRADES.

The number of offensive trades on the register is 935. These have been placed under close supervision, and periodical visits paid.

UNHEALTHY DWELLINGS.

During the year, 2,194 houses were certified to be dealt with by the Sanitary Committee.

Of these, 2,183 were ordered to be closed, and 11 were adjourned.

In the majority of these the owners arranged to make alterations to meet the requirements of the Corporation.

Prosecutions for Offences, with Results.

Description of Offence	Number of Summonses taken out	Number of Persons Fined, with Costs	Number of Persons ordered to pay Costs only	Number adjourned	Number Excused, Dismissed, or Withdrawn	Amount of Fines Imposed	Amount of Costs ordered to be Paid
						£ s. d.	£ s. d.
Did not affix notice in shop as to Assistants' Weekly Half-holiday	25	17	3	..	5	3 14 6	4 8 6
Did not close shop for serving customers one half-day per week	38	32	3	..	3	12 8 6	10 1 6
Did not allow assistants to have half-holiday	13	7	1	..	5	4 5 0	5 10 6
Hairdressers shop open in contravention to the "Closing Order"	2	2	..	..	..	1 5 0	0 14 0
Having bakehouse in a dirty state	1	..	1	..	..	..	0 3 6
Neglecting to place workshops in a proper sanitary condition after notice	2	..	..	..	2	..	..
Neglecting to allow assistants interval for meals..	5	5	..	..	..	2 14 0	2 18 6
Not having fixed in shop Abstract of Act *re* employment of young persons.. ..	1	1	..	..	..	0 2 6	0 2 6
Not forwarding lists of outworkers to the Department	1	..	1	..	..	..	0 3 6
Total..	88	64	9	..	15	24 9 6	24 2 6

PARTICULARS RELATING TO THE OPERATIONS OF THE CLEANSING DEPARTMENT.

The Medical Officer of Health is indebted to Mr. Williamson, Superintendent of the Cleansing Department, for the following particulars relating to the operations of the Cleansing Department during the year ending 31st March, 1914.

Cleansing Department,
Town Hall, Manchester,
June, 1914.

Dear Sir,—There are within the City (exclusive of the District of Withington, but inclusive of Gorton and Levenshulme) 2,138 pail-closets; 31,875 ash-boxes; 112,843 ash-bins; 218 midden-privies; 128 wet middens; 484 dry middens; 170,245 water-closets at dwelling-houses; and 5 cesspools. The pail-closets are systematically emptied at regular intervals—once, twice, or thrice weekly, as necessity demands. The middens are emptied as required, The contents of the pail-closets are taken to Holt Town and Water Street. At Holt Town the fæcal matter is dried into concentrated manure. The dry refuse is consumed in the Galloway boilers, and generates the steam required for working the machinery. The worthless fine ash, which cannot be consumed, is deposited at the nearest tip at Clayton Vale. The privy refuse and fæcal matter, taken to Water Street, is sent away in its crude state as nightsoil to Carrington and Chat Moss Estates. Dry combustible matter is passed into the destructor furnaces or the Galloway boilers at Water Street, and there destroyed. A quantity of fine ash at Water Street is used as an absorbent for the fæcal matter from the pail-closets.

The market garbage, of which we have 4,679 tons per annum, is carted to Water Street, and destroyed in the furnaces or sent to the Committee's Estates. Slaughter-house refuse is collected from the abattoirs and private slaughter-houses and sent to Holt Town, where it is passed through dryers, and the dry material is then added to the concentrated manure. Street sweepings are generally deposited at the nearest depot, and afterwards carted to Water Street Depot and Ardwick Sidings, from whence they are despatched to farmers or to the Committee's Estates.

The total quantity of material collected by this Department during the past year amounted to 311,855 tons.

Within the City there are 33 destructor furnaces and 20 boilers, and last year 10,855 tons of mortar were made from the clinker obtained from such furnaces.

About 56 "orderly" youths and men are employed to collect horse-droppings and litter from the streets, and deposit the same in the bins fixed in the footpaths. The contents of the bins are removed twice daily, and taken to the nearest depot.

Acting upon instructions received from you, special pails and lids are supplied for all cases of Enteric Fever; labels are attached to the pails asking the occupants of the house to use disinfectants, which are supplied with the pails; the pails are left in the yard, and not placed in the ashplace. The occupants are requested to use this special pail for the reception of the fæcal matter and washings from the patient only. The pails are removed in a specially-constructed vehicle, and taken to Holt Town Depot, where the contents are destroyed.

There is a staff of about 54 men engaged specially upon the work of cleansing passages. They regularly, at least once a week, cleanse the back passages in certain districts, and during last year 417,454 swillings and cleanings were effected in courts and passages.

During the year, 101,146 barrels of water were used in degging the streets, and 424,526 grids were unstopped.

During the past 21 years, we have deposited upon the various tips within the City the following quantities of material, viz.:—In 1892, 99,866 tons; 1893, 109,078 tons; 1894, 103,949 tons; 1895, 113,836 tons; 1896, 107,883 tons; 1897, 99,658 tons; 1898, 96,635 tons; 1899, 104,481 tons; 1900, 95,138 tons; 1901, 64,781 tons; 1902, 117,619 tons; 1903, 180,985 tons; 1904, 141,999 tons; 1905, 118,093 tons; 1906, 109,446 tons; 1907, 134,072 tons; 1908, 120,581 tons; 1909, 123,183 tons; 1910, 127,409 tons; 1911, 107,742 tons; 1912, 102,190 tons; 1913, 89,909 tons; and in 1914, 99,800 tons. The bulk of this material was deposited on the tips at Clayton, Harpurhey, and on Carrington and Chat Moss Estates. It is composed principally of dry ashes, street sweepings, and bell-dust. During last year 22,178 tons of material was sent to Carrington Estate and 54,859 to Chat Moss Estate.

Yours faithfully,

R. WILLIAMSON,

Superintendent.

Dr. Niven,
Medical Officer of Health,
Town Hall, Manchester.

WITHINGTON COMMITTEE.

REPORT FOR THE YEAR 1913 OF THE DISTRICT MEDICAL OFFICER OF HEALTH,

DR. W. ST. C. MCCLURE.

Area of the District in Acres	5,773
Population 1911 (Census), exclusive of Workhouse	49,140
Population 1913 (estimated to middle of year)	53,467
General Death-rate per thousand Population..	9·2
Infant Death-rate per thousand Births	73·7
Birth-rate per thousand Population..	19·5

I beg to submit the following statement as to the health of the Withington District of Manchester during the past year.

Population.—The population of the district in June, 1913, was estimated at 53,467, distributed over the several townships as follows:—

Withington (including Whalley Range)	20,877
Didsbury	12,618
Chorlton-cum-Hardy	16,448
Burnage	3,524
	53,467

Area.—The area is 5,773 acres.

Density.—The mean density of the population, *i.e.*, the number of persons to each acre, is 9·6.

Births.—The total number of births was 1,044, which gives a birth-rate of 19·5, compared with 19·2 in the previous year and 19·3 in 1911. The natural increase, or gain by excess of births over deaths, was 570, as against 503 in 1912.

Deaths.—The total number of deaths recorded was 474—235 males and 239 females. Of these, 393 were of residents within the district, 47 of residents in the South Manchester Infirmary, and 34 of residents in localities outside the district.

Calculated on the above figures, the death-rate for the year was 8·8, or corrected for age and sex, 9·2. This is the lowest death-rate which has yet been recorded in the District. The corrected rate for 1912 was 9·8.

THE ANNUAL DEATH-RATES PER 1,000 OF THE POPULATION SINCE 1876 ARE AS FOLLOWS:—

1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894
15·8	13·2	13·2	13·5	13·7	13·5	14·3	13·4	13·0	13·9	12·0	13·1	12·2	13·2	13·4	15·0	13·7	12·7	10·7

1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
11·9	10·9	11·4	12·4	11·3	12·3	12·1	11·7	11·3	11·8	10·0	11·4	10·4	11·3	11·1	10·0	10·6	9·8	9·2

	Births	Deaths	Birth-rate	Death-rate
Withington (including Whalley Range)..	474	192	22·7	9·2
Didsbury	189	107	14·9	8·4
Chorlton-cum-Hardy..	309	149	18·7	8·1
Burnage	72	26	20·4	7·3

The main causes of death were Tubercular Diseases 50, Cancer 41, Pneumonia 30, other Diseases of the Respiratory System 34, and Heart Diseases 71. There were 8 deaths attributed to Alcoholism, Accidents were responsible for 4, and Suicide for 2.

In the age-period 1–5, the chief causes of death were Whooping Cough (4), Tubercular Diseases (9), Pneumonia (11), Measles (5).

In the following table are given the annual rates of mortality from certain diseases and groups of diseases :—

Table I.—Death-rates per thousand from the principal diseases, 1905 *to* 1913.

Name of Disease	1905	1906	1907	1908	1909	1910	1911	1912	1913
Measles	0·18	0·10	0·05	0·31	0·02	0·06	0·02	0·13	0·09
Scarlet Fever ...	0·02	...	...	...	0·12	0·02	0·10	0·09	0·05
Whooping Cough	0·05	0·05	0·20	0·20	0·04	0·06	0·20	0·15	0·07
Diphtheria & Membranous Croup	0·10	0·15	...	0·11	0·08	0·10	0·06	0·07	0·05
Enteric Fever ...	0·05	...	0·07	0·04	0·02	0·02	...	...	0·03
Epidemic Influenza	0·28	0·20	0·17	0·18	0·36	0·12	0·20	0·11	0·14
Diarrhœa	0·21	0·43	0·10	0·31	0·15	0·06	0·44	0·11	0·13
Phthisis	0·52	0·89	0·97	0·72	0·67	0·56	0·80	0·65	0·65
Other Tubercular Diseases	0·23	0·38	0·37	0·47	0·32	0·37	0·35	0·28	0·28
Cancer, Malignant Diseases	0·84	0·71	0·70	0·79	0·71	0·83	1·00	0·96	0·76
Diseases of the Respiratory Organs	1·73	1·79	1·77	1·24	1·56	1·31	0·79	1·60	1·19
Alcoholism, Cirrhosis of Liver	0·13	0·15	0·22	0·09	0·28	0·20	0·10	0·13	0·14
Heart Diseases ...	1·21	1·07	1·40	1·35	1·69	1·23	1·37	1·60	1·32

Infantile Mortality.—During the year 77 deaths of infants under one year occurred. This corresponds to an annual Infantile Mortality rate per 1,000 births of 73·7. The mean for the past 10 years was 89·3.

The following table shows the varying rates for the several townships for the years 1903–1913 :—

Infantile Mortality-rates per thousand births, 1903–1913.

Township	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Withington	139	110	89	96	107	88	80	78	94	72	78
Didsbury	92	93	66	144	76	123	56	57	70	69	74
Chorlton-cum-Hardy ..	80	105	67	104	79	107	70	82	89	52	61
Burnage	89	104	164	145	109	160	156	47	80	69	97
Whole District ..	105	94	85	113	91	106	76	72	87	64	73·7

As is seen from Table II., 54 per cent. of the deaths of infants occurred within the first three months of life. What may be regarded as "antenatal causes" (indicated by prematurity, congenital defects, atrophy, and some cases of convulsions and lung diseases) were responsible for 40 per cent., other diseases of the respiratory system for 18 per cent., and Diarrhœa for 7 per cent.

The mortality amongst illegitimate infants was 258 per 1,000 born. This figure, however, is misleading, in that out of 31 illegitimate children born in the district 4 only died, giving a rate of 129. The remaining deaths occurred among illegitimate infants born outside but resident within the district at the time of death.

Table II.—Causes of deaths under 5 years in 1913.

	0–3 Months	3–6 Months	6–12 Months	Total under 1 year	1–2 years	2–3 years	3–4 years	4–5 years	Total under 5 years
asles	—	—	2	2	2	1	—	—	5
ooping Cough	—	1	1	2	1	—	—	1	4
rlet Fever	—	—	—	—	—	—	—	—	—
phtheria and Membranous Croup	—	—	—	—	—	1	1	1	3
philis	1	—	—	1	—	—	—	—	1
rrhœa and Enteritis..	3	2	1	6	—	—	—	—	6
berculosis	—	1	5	6	2	1	—	—	9
mature Birth	13	2	—	15	—	—	—	—	15
rophy	4	3	—	7	—	—	—	—	7
ngenital Defects.. ..	5	—	—	5	—	—	—	—	5
nvulsions	2	—	—	2	—	—	—	—	2
ckets	—	—	—	—	—	—	—	—	—
seases of Respiratory System..	6	3	5	14	3	—	—	—	17
ain Disorder (other) ..	—	3	1	4	—	—	—	—	4
ffocation	5	—	1	6	—	—	—	—	6
her causes	2	2	1	5	—	1	1	1	8
uries	1	1	—	2	—	—	—	1	3
	42	18	17	77	8	4	2	4	95

INFECTIOUS DISEASES.

Smallpox.—No case occurred.

Poliomyelitis.—One case of this disease was notified and investigated.

Measles.—376 cases were reported. The disease was considerably less prevalent during 1913 than it has been for some years. The cases were distributed fairly evenly throughout the year, no marked epidemicity being shown.

The case mortality was 1·3 per cent., compared with 1·3 per cent. in 1912, and ·30 per cent. in 1911.

Incidence of Measles upon children at various ages, 1913.

	0–1 years	—2 years	—3 years	—4 years	—5 years	—6 years	—7 years	—8 years	—9 years	—10 years	—11 years	—12 years	—13 years	—14 years	— over	Total
Primary Cases ..	2	3	9	13	22	54	51	33	19	19	11	4	6	3	4	253
Secondary Cases	9	15	28	20	22	8	5	2	4	5	2	1	1	—	1	123
Total ..	11	18	37	33	44	62	56	35	23	24	13	5	7	3	5	376

Whooping Cough.—121 cases of this disease were registered during 1913. The cases were evenly distributed throughout the year. Four deaths occurred, 2 of which were of children under 1 year of age. The case mortality was 3·3 per cent., compared with 4·6 per cent. in 1912.

SCARLET FEVER.

The following table shows the number and distribution of cases of Scarlet Fever notified during 1913, together with the number of patients removed to Hospital :—

Month	Withington	Didsbury	Chorlton-cum-Hardy	Burnage	Total	Number removed to Hospital
January	3	3	1	1	8	4
February	6	—	2	—	8	6
March..	7	—	1	—	8	2
April	5	—	1	—	6	1
May	2	—	—	2	4	4
June	3	—	2	2	7	4
July	5	1	1	3	10	3
August	7	—	2	1	10	6
September	7	4	1	—	12	7
October	7	3	3	—	13	5
November	9	4	14	11	38	15
December	11	2	2	1	16	6
	72	17	30	21	140	63

These numbers show a considerable decrease on those for 1912. As will be seen from the above table, the greatest incidence of attack occurred in the month of November. It was found that the spread of infection was not due to any one discoverable cause, such as infected milk. A number of the cases were traced to infection at the elementary schools, and overlooked or unrecognised cases were responsible for much of the infection.

The attack-rate for the year was 2·6 per thousand, and the case mortality was 2·1 per cent., as compared with 3·0 for 1912.

Diphtheria.—The following is the usual table relating to the distribution of Diphtheria during the year :—

Month	Withington	Didsbury	Chorlton-cum-Hardy	Burnage	Totals	Number removed to Hospital
January	3	3	—	—	6	4
February	2	—	—	—	2	1
March	4	—	—	—	4	3
April	—	—	—	—	—	—
May	1	—	—	—	1	1
June	3	—	—	—	3	1
July	1	—	—	—	1	1
August	3	—	3	—	6	3
September	1	—	—	—	1	—
October	1	1	—	—	2	1
November	1	3	1	—	5	2
December	2	2	—	—	4	1
	22	9	4	—	35	18

The attack-rate for the whole district was 0·6 per thousand, compared with 0·7 in 1912 and 0·8 in 1911.

The case-mortality was 8·5 per cent., as compared with 10·0 per cent. in 1912.

Bacteriological Examinations.—The total number of throat swabs examined was 89 ; 22 with positive results, 62 with negative, and 5 in which the result was doubtful.

Of the cases notified, 24 (or 68 per cent.) were examined bacteriologically at the commencement of the illness ; in 21 of these Diphtheria bacilli were found.

In cases treated at the hospital, it is the custom to obtain two successive negative swabs before the patient is discharged ; in the 17 cases treated in their own homes negative bacteriological results were obtained before release of the patient in 2 instances.

Diphtheria Antitoxin.—84 phials, containing 168,000 units, were supplied free to the medical profession. It is possible to obtain the remedy at the various police stations, and practitioners have availed themselves freely of this facility.

For the convenience of doctors in the Chorlton-cum-Hardy district, Diphtheria Antitoxin and outfits for bacteriological examination can be obtained at the Withington Committee's depôt in Albany Road.

Enteric Fever.—Nine cases of this disease were reported during the year. The average number of cases during the previous 10 years was 8·7. Two deaths occurred.

Thirty-four specimens of blood were sent to the laboratory for examination, of which 6 yielded a positive Widal reaction.

The attack-rate for the whole district was 0·10 per thousand of the population, compared with 0·25 in 1912.

Five cases were removed to Monsall Hospital, the remainder being nursed at home.

Erysipelas.—Twenty cases of Erysipelas were notified during the year, one of which terminated fatally. The usual inquiries were made in each case—particularly as to whether a monthly or district nurse was in attendance—and disinfection was carried out where necessary.

Puerperal Fever.—Five cases were notified and investigated. All were removed to Monsall Hospital for treatment. In each case the bedding was stoved and the usual precautions taken to prevent the nurses carrying infection. One death occurred.

Ophthalmia Neonatorum.—Seven cases were notified, and each one was followed up to ascertain that the necessary treatment was being obtained. In none was the eyesight permanently affected.

Phthisis.—During the year, 35 deaths were recorded from this disease, compared with 39 in 1912. One hundred and forty-one specimens of sputum were examined, and a positive result obtained in 40.

The following table shows the death-rate and the number of cases in which rooms and bedding have been disinfected after Phthisis for each year since the practice was commenced :—

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Death rate from Phthisis	·76	·77	1·05	·78	·52	·89	·97	·72	·67	·56	·80	·75	·65
Rooms of patients disinfected and bedding stoved	20	20	30	24	24	37	89	104	93	137	151	244	299

Removal to Hospital.—The number of patients removed to hospital was as follows :—

Disease	Monsall	South Manchester Infirmary	Total
Diphtheria	15	2	17
Erysipelas	2	6	8
Scarlet Fever	62	2	64
Enteric Fever	4	1	5
Puerperal Fever	4	..	4
	87	11	98

The number of patients who have suffered from Scarlet Fever, Diphtheria, and Enteric Fever in the District in each of the years from 1897 to 1913, together with the annual number of removals to hospital, is shown in the following table :—

Year	Number of Cases of Fever in the District	Removed to Hospital	Percentage
1897	S.F. 177. D. 16. E. 10—Total 203	121	59
1898	S.F. 70. D. 22. E. 25— ,, 117	54	46
1899	S.F. 68. D. 16. E. 16— ,, 100	28	28
1900	S.F. 204. D. 14. E. 8— ,, 226	120	53
1901	S.F. 245. D. 31. E. 11— ,, 287	162	56
1902	S.F. 109. D. 26. E. 6— ,, 141	73	51
1903	S.F. 85. D. 31. E. 14— ,, 130	58	44
1904	S.F. 80. D. 28. E. 5— ,, 113	43	38
1905	S.F. 136. D. 50. E. 6— ,, 192	92	47
1906	S.F. 113. D. 64. E. 12— ,, 189	133	70
1907	S.F. 128. D. 24. E. 21— ,, 173	96	55
1908	S.F. 94. D. 77. E. 8— ,, 179	96	54
1909	S.F. 248 D. 68. E. 4— ,, 320	193	60
1910	S.F. 186. D. 38. E. 8— ,, 232	119	51
1911	S F. 284. D. 42. E. 3— ,, 329	208	60
1912	S.F. 168. D. 40. E. 16— ,, 224	171	76
1913	S.F. 140 .D. 35. E. 9— ,, 184	86	47

Other Matters.

Number of Water-closets and Privies in the District.—The work of substitution of water-closets for the insanitary privy accommodation is nearing completion.

The number of privies demolished during the last ten years is as follows :—

1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	Total
124	137	187	247	126	167	125	99	147	137	1,496

The total number of privies remaining is 251.

The following figures show the approximate number of houses in the district with water-closet or other accommodation on December 31st, 1913 :—

Number of houses with water-closets only					13,680
,,	,,	,,	,,	and privies	60
,,	,,	,,	,,	and slop water-closets ..	29
,,	,,	,,	privies only		201

Thus there are 13,769 houses with water-closets, 69 of which have, in addition, some other form of accommodation.

There are also a number of premises provided solely with pail-closets, as follows :—

Schools	Farms	Golf Clubs and Cricket Grounds	Works	Houses	Total
2	9	6	17	27	61

The total number of cesspools in the District is 42.

Building in the District during 1913.—The total number of houses certified as fit for habitation during the year ending December 31st, 1913, was 435, distributed as follows :—Withington (including Whalley Range), 196 ; Didsbury, 27 ; Chorlton-cum-Hardy, 206 ; Burnage, 6. In all these the drains have been tested by the Inspector of New Buildings.

The Inspector of Nuisances reports the particulars of Work carried out during the Year ending December 31st, 1913.

Complaints.—The number of complaints or requests received and attended to during 1913 was 265, compared with 282 in 1912, arising from the several townships, as follows :—

Withington (including Whalley Range)	108
Didsbury and West Didsbury	83
Chorlton-cum-Hardy	69
Burnage..	4
Outside the Withington District	1
Total	265

It is satisfactory to record a decrease in the number of complaints, especially taking into consideration the weather conditions of the past year, which caused the complaints of nuisances from sewer manholes to be more numerous than they have been for some years, especially during July, September, and October, when they reached 23 per cent. of the total received during those months. As a result of those complaints 44 sewer manholes have been sealed by the Highways Department, and in this way a permanent abatement of the nuisances has been effected.

Considering the large increase of population within the District, there can be no doubt that the decrease in the number of complaints received must be attributed to the demolition of the 1,500 offensive ashpits and privies for which water-closets and galvanised-iron dust-bins have been substituted during recent years.

Notices served during the year for alteration of insanitary conditions—163.

	Notices	Premises Concerned
Under Section 36 P.H. Act, 1875	12	7
,, ,, 41 ,, ,, ,, ...	27	35
,, ,, 91–94 ,, ,, ,, ...	7	7
,, ,, 15, Factory and Workshops Act, 1901..	1	1
,, Dairies' and Cowsheds' Orders	1	1
Town Clerk Notices	115	216
Total	163	267

Notices of intention to enter premises under Section 41, P.H. Act, 1875—35.

	Under Notice	Without Notice	Total
Insanitary Premises Altered	275	164	439
Overcrowding discontinued	2	2	4
Removal of Animals	1	8	9
Accumulations of Manure, etc., removed ..	1	7	8

Premises inspected as to their sanitary condition—492.

Premises inspected after the notification of infectious fevers, including Phthisis and other tubercular diseases—274.

Re-visits to premises *re* cases of Phthisis, Measles, Whooping Cough, etc.—223.

Premises visited *re* passengers from infected ports or ships (Smallpox, etc.)—13.

Disinfection.—The total number of articles stoved during 1913 was 4,376, and consisted of the following:—Beds, 376; mattresses, 87; pillows, 773; blankets, 702; carpets, 389; clothes, 1,215; counterpanes, 299; sundries, 535.

Library and other books fumigated with Formaldehyde Gas—80.

Premises disinfected after fevers, including Phthisis, etc.:—Houses, 201; rooms, 355.

Re-inspections of premises during disinfection—388.

Business premises closed during disinfection—1.

Drainage and Sanitary Alterations.

Drainage systems of premises smoke tested—3.

The smoke tests were applied by request, and the cost charged to the applicants.

During the year 1,473 inspections were made of works in progress; 624 tests of drains, water-closets, and soil pipes were made with the water test in connection with sanitary alterations.

43 premises were re-drained throughout and tested with the water test. (35 under notice and 8 without notice).

Details of Work done	Under notice	Without notice	Total
Defective water-closets replaced by new ones ..	44	15	59
Additional water-closets provided	1	5	6
Water-closets substituted for privies	50	15	65
New soil pipes of heavy cast iron	33	17	50
New heavy cast-iron ventilating shafts provided to soil pipes and to drains	40	20	60
Waste pipes or rain-water pipes: trapped, renewed, or repaired	245	56	301
Manholes, with approved disconnecting traps ..	—	3	3
Manholes, without disconnecting traps	—	3	3
Disconnecting traps, without manholes..	12	3	15
Privies dismantled and sites made good	93	44	137
Ashpits dismantled and sites made good	131	62	193
Galvanised-iron dust-bins provided	174	70	244
Cellar floors: flagged, concreted, or repaired ..	53	14	67
Yards or scullery floors: flagged, concreted, or repaired	103	6	109
House floors: renewed, repaired, or ventilated ..	10	3	13
House roofs' and eaves' gutters: repaired or renewed	10	1	11
Scullery and yard walls: rebuilt or repaired ..	26	6	32
Walls, floors, and roofs of w.c. chambers rebuilt or repaired	72	6	78
Windows for light and ventilation to w.c. chambers	63	16	79
New areas built for cellar drains	7	2	9
W.C. or yard drains: cleansed, repaired, or relaid..	34	29	63
Stopped drains or gullies: opened and cleansed ..	3	26	29
Cesspools dismantled..	—	1	1
Manure pits newly built	1	1	2
Manure pits roofed and repaired	1	1	2
Manure receptacles of galvanised iron	4	1	5

Water Supply.—The Corporation water supply has been constant throughout the year.

Two samples of surface water have been taken from a stream accessible to cattle in the fields off Millgate Lane, Didsbury, and submitted for analysis, and reported to be contaminated with sewage. All the milk farms in the district are supplied with Corporation water.

Dairies, Cowsheds, and Milkshops.—During the year, 496 visits or inspections have been made of cowsheds and milkshops. The cowsheds have been regularly limewashed, and are in good repair.

In 11 instances, milkshops have been cleansed after request.

Two farms (one at Withington and one at Burnage) have had manure pits constructed with impervious floors and walls, and properly drained in accordance with the Regulations.

A cowshed at Burnage, with space for 8 cows, has been brought into use again, after being closed for some years; on the other hand, a cowshed for 8 cows at Albany Road, Chorlton-cum-Hardy, has been converted into a stable.

Four cowkeepers and 17 purveyors of milk have been registered during 1913. Three cowkeepers and 10 purveyors of milk discontinued the sale of milk, and their names have been removed from the register.

Registered milksellers in the District—164. Registered cowkeepers in the district—35. Cowsheds—86. Milkshops—88.

Approximate number of dairy cows in the District—512; and the average number for the last 10 years has been 564.

Slaughter-houses.—The four slaughter-houses in use in the District have had 52 visits or inspections during the year. In two instances the Inspector had occasion to request the occupiers to have the limewashing done. The Cleansing Department remove the offal twice each week, and the places are conducted in a satisfactory manner.

Stable Premises.—144 visits have been made to stable yards, etc., where accumulations of manure take place. A stable behind No. 37, Wilbraham Road, Chorlton-cum-Hardy, has been pulled down in compliance with a statutory notice served on the owner. In three other instances galvanised-iron receptacles with proper covers have been provided for the stable manure, and legal proceedings have been taken against four occupiers for contravention of bye-laws in not providing covered receptacles for stable manure after written notices had been served.

Prosecutions.

Premises	Offence	No. of Cases	Result
Stables in Needham Avenue, Chorlton-cum-Hardy	Failing to provide covered receptacles for manure	Four	After two adjournments work done, and the defendants ordered to pay the costs of the summonses

Reports made to the Medical Officer—700.

Reports made to the Surveyor—20.

Letters written for abatement of nuisances, etc.—156.

Circulars sent for abatement of nuisances, etc.—61.

Miscellaneous inspections, visits to premises, etc.—1,421.

Factory and Workshop Act, 1901.

Inspections, re-inspections, or visits to factories and workshops.	1,012
Bakehouses cleansed or limewashed after request	41
Workshops cleansed or limewashed after request	30
Outworkers' rooms cleansed or limewashed after request.. ..	1

Shops Act, 1912.

Total number of shops registered in the Withington District ..	770
Total number of visits *re* Shops Act	99

During the year there were 30 new businesses opened in the District, and 24 changes of tenancy recorded in the register.

WM. MOSS,

Inspector of Nuisances.

REPORT ON THE ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901, IN SO FAR AS THIS ADMINISTRATION IS IN THE HANDS OF THE WITHINGTON COMMITTEE, AND IS CONCERNED WITH MATTERS IN THE DEPARTMENT OF THE DISTRICT MEDICAL OFFICER OF HEALTH.

1.—*Workshops.*

The number of workshops now on the register is 331, distributed throughout the District as follows :—

	Withington and Whalley Range	Didsbury	Chorlton-cum-Hardy	Burnage	Total
Workshops	76	90	69	2	237
Bakehouses	13	17	18	2	50
Laundries	2	3	3	..	8
Factories..	16	10	9	1	36

The cubic capacity of each workshop has been measured, and cards have been placed in each room showing the maximum number of workpeople allowed.

Attention has been given to the cleanliness and ventilation of the workshops,

In 35 cases the walls and ceilings of the workshops were found to be in a dirty condition, and verbal instructions were given by the Inspector to have the premises cleansed.

This request has, in 30 instances, been sufficient to cause the premises to be cleansed without legal notice. In 4 instances the occupiers removed, and the remaining 1 is still outstanding at the end of the year.

In 4 workshops the sanitary accommodation was found to be unsatisfactory. 1 of these being first reported by H. M. Inspector.

No written notices were served in respect of the above, *verbal requests only being necessary.*

Five " Notices of Occupation " and three " Notices of Defects " were received from H. M. Inspector during 1913. The defects have since been remedied, and H. M. Inspector notified of the action taken. In one of these instances it was necessary to serve a Statutory Notice under Section 15, Factories and Workshops Act, 1901, to provide means of escape in case of fire. A substantial iron staircase has since been erected in compliance with the notice served.

In the other two cases—(1) the overcrowding of a workshop, (2) the want of an ante-chamber to a water-closet—the defects were remedied after verbal request.

In 16 instances the closets were found to be improperly kept ; and verbal instructions given by the Inspector for them to be cleansed at regular intervals have led to an improvement. In another instance a large accumulation of trade refuse was removed to the destructor after request.

2.—*Bakehouses.*

There are now on the register 50 bakehouses, which, on the whole, are kept in a clean and satisfactory condition. In 39 instances during the year it has been found necessary to call the attention of the occupiers to the state of the walls, etc., and to request them to have them cleansed. In all cases this has been done without written notice. In 3 instances it was necessary to request the occupiers to cleanse the windows. In 10 instances the sink waste pipes have been trapped after verbal request, and in one instance ventilation provided.

All the bakehouses comply with the Act in not having any sanitary convenience or ashpit communicating directly with them ; in not having any cistern for supplying water to them connected in any way with a water-closet ; in having no drain openings inside ; and in having no sleeping place connected with them.

The bakehouses are distributed over the District as follows :—

Chorlton-cum-Hardy	18
Withington	13
Didsbury	17
Burnage..	2
	50

There are no cellar-bakehouses in the District.

3.—*Homework.*

Information with regard to persons in the District taking in homework from places of business outside the District has been received in 35 instances during the year. These premises have been inspected and recorded in the Outworkers' Register. The number of visits paid during the year to premises in which homework has been carried on was 40. No infectious fevers have been notified during the year as occurring in connection with the premises occupied by homeworkers.

In 3 instances employers living in this District have been reported as giving out work to homeworkers who live in other districts. The names and addresses of these have been sent to the Sanitary Authorities of the district in which they live. In one instance the walls, ceilings, etc., of an outworker's room were cleansed, after verbal instructions from the Inspector, and in one instance an obstructed drain was cleansed.

4.—*Workplaces.*

Under this heading the following are classified :—

New buildings in course of erection, 28 ; street works, 26 ; fish and game shops, 9 ; cab yards and stables, 10 ; slaughter-houses, 4—total, 77.

In the case of new buildings, it was found that in 10 instances no sanitary accommodation existed for the workmen. A verbal request was sufficient to cause satisfactory accommodation to be provided.

Total number of visits to workplaces during the year, 179.

5.—*Factories.*

There are 36 places in the Withington District in which mechanical power is used.

These are as follows :—

Bootmakers, 5 ; ironmongers, 1 ; bottling stores, 1 ; laundries, 9 ; printers, 3 ; joiners, 3 ; cycle makers and motor engineers, 5 ; brick-workers, 2 ; blacksmith, 2 ; dentist, 1 ; rubber works, 1 ; organ builder, 1 ; chain works, 1 ; tripe boiler, 1. Total number of visits to factories during the year, 73.

Workshops.

Number of visits	623
Number in which Sanitary defects were found and reported to the Medical Officer of Health	0
Number of reports referred to Factory Inspector (unregistered workshops)	0
Number of cases in which Magisterial proceedings have been taken	0
Number registered during the year	29
Total number on register	281
Number of visits to houses where outworkers are employed	40
Factories and Workshops not provided with proper means of escape in case of fire	1

Bakehouses.

Number of visits	170
Number in which Sanitary defects were found	0
Number of reports referred to Factory Inspector	0
Number of cases in which Magisterial proceedings have been taken	0
Number registered during the year	3
Total number on register	50

1.—Inspection.

Premises	Number of		
	Inspections	Written Notices	Prosecutions
Factories...	73	1	0
Workshops	550	0	0
Bakehouses	170	0	0
Workplaces	179	0	0
Homeworkers' Premises	40	0	0
Total	1012	1	0

2.—Defects Found.

Particulars	Number of Defects			No. of Prosecutions
	Found	Remedied	Referred to H.M. Inspector	
Nuisances under the Public Health Acts :—				
Want of cleanliness	74	73	0	0
Want of ventilation	1	1	0	0
Overcrowding	1	1	0	0
Sanitary Accommodation (Section 22 adopted)				
Insufficient	0	0	0	0
Defective	4	4	0	0
Not separate for Sexes...	0	0	0	0
	80	79	0	0

3.—Other Matters.

Class	Number	
Matters notified to H.M. Inspectors of Factories :—		
Failure to affix abstract of the Factory and Workshop Act (S. 133)	0	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts but not under the Factory Act (S. 5):—		
Notified by H.M. Inspector	3	
Reports (of action taken) sent to H.M. Inspectors.	3	
Other	0	
Underground Bakehouses (S. 101) :—		
In use during 1903	8	
Certificate granted in 1909	0	
Certificate granted in 1910	0	
In use at the end of 1910	0	
Homework :—	Number of Lists	Number of Outworkers
List of Outworkers (S. 107) :—		
Lists received	9	40
Addresses of outworkers forwarded to other authorities		3
Addresses of outworkers received from other authorities		35
	Wearing Apparel	Other
Homework in unwholesome or infected premises :—		
Notices prohibiting homework in unwholesome premises (S. 108)	0	0
Cases of infectious disease notified in homeworker's premises	0	0
Orders prohibiting homework in infected premises (S. 110)	0	0
Workshops on the Register (S. 131) at the end of 1913 :—		
Dressmaking		30
Bootmakers		51
Joiners		23
Plumbers		14
Blacksmiths and Wheelwrights		13
Decorators		8
Millinery		12
Ironmongers		4
Cabinetmakers		10
Tailors		13
Bakers		50
Laundries		17
Hairdressers		16
Monumental Masons		3
Saddlers		3
Printers		4
Watchmakers		1
Picture Framing		1
Knitting		2
Cycles and Motor Garage		18
Bottling Stores		2
Brickworks		2
Workplaces		23
Miscellaneous		7
Slaughterhouses		4
Total number of Workshops on Register		331

Total Number of Shops Registered in the Withington District.

TRADE	Ladybarn and Burnage	Chorlton-cum-Hardy	Didsbury and West Didsbury	Withington	Whalley Range and Moss Side	Total
Boot and Shoe Dealers	4	14	19	9	9	55
Coal Yards	3	..	8	2	..	13
Corn and Provender Dealers	..	1	..	1	..	2
Electrical Fittings	..	1	1	..	..	2
Fent Dealers	..	1	2	..	..	3
Hairdressers	1	5	5	3	1	15
Machinery and Typewriters	..	1	..	1	..	2
Incandescent Mantles	2	1	5	3	..	11
Picture Dealers	..	1	..	..	..	1
Paint and Colour Dealers	..	1	..	1	..	2
Saddlers	..	1	1	1	..	3
Second-hand Clothing	..	..	..	..	1	1
Wallpaper Salesmen	..	..	4	1	..	5
Exempted Trades.						
Antique Dealers	..	..	1	..	..	1
Butchers	6	18	15	7	7	53
Chemists and Druggists	1	6	5	4	..	16
Cycle and Motor Dealers	..	4	3	2	..	9
Confectioners	10	25	28	15	12	90
Dairymen	1	4	9	2	4	20
Drapers	4	16	12	4	9	45
Dress and Mantle Dealers	..	7	6	2	..	15
Florists	..	1	4	1	1	7
Fruiterers	1	7	8	2	2	20
Fishmongers	..	5	4	2	..	11
Fried Fish and Chips	2	4	6	3	4	19
Furniture Dealers	1	6	4	2	1	14
Glass and China Dealers	..	2	3	..	..	5
Greengrocers	7	6	7	3	6	29
Grocers and Provision Dealers	12	25	21	16	24	98
Hatters	..	1	..	..	..	1
Hardware Dealers	3	7	7	2	4	23
Hosiers and Outfitters	..	4	3	..	..	7
Intoxicating Liquors	12	15	23	13	2	65
Jewellers	..	2	4	2	..	8
Millinery	..	4	3	3	2	12
Music and Musical Instruments	..	1	..	1	..	2
Pork Butchers	..	..	..	1	..	1
Photographers	..	1	1	..	..	2
Stationers and Booksellers	3	12	9	4	6	34
Tailors	..	1	7	1	..	9
Tobacconists	3	9	7	2	3	24
Tripe	..	1	..	..	..	1
Refreshments, &c.	..	..	..	..	1	1
Empty Shops	7	2	2	1	1	13
	83	223	247	117	100	770

TABLES.

TABLE A.—MANCHESTER, 1913.

CAUSES OF DEATH AT DIFFERENT LIFE PERIODS IN THE 53 WEEKS OF THE YEAR.

PERSONS.—(MALES AND FEMALES.)

CAUSES OF DEATH	Ages at Death													
	All Ages	Under 5 Years		5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards
		0 to 1	1 to 5											
All Causes	11718	2452	1353	286	164	217	236	653	995	1326	1545	1567	801	12
A.—General Diseases	4597	1305	741	145	83	124	130	327	449	451	454	305	72	
B.—Local Diseases	5809	712	530	105	66	81	89	284	482	803	1014	1091	499	5
C.—Other Specified Dis:	...	...	...	...	...	...	...	...	...	...	...	...	...	...
D.—Ill-defined Diseases	801	329	26	1	...	...	...	...	2	2	30	140	212	5
E.—Violent Deaths	511	106	53	35	15	12	17	42	62	70	47	31	18	
A.—General Diseases.														
Smallpox.. Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox.. Not Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox.. No Statement	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cowpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chickenpox	2	2	...	...	...	...	...	...	...	...	...	...	...	...
Measles	259	70	174	15	...	...	...	...	...	...	...	...	...	..
Epidemic Rose Rash	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever..	94	2	55	27	5	4	...	1	...	...	...	...	...	...
Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Relapsing Fever	...	...	...	.	...	...	...	...	...	...	...	...	...	...
Influenza	122	6	4	2	...	5	5	10	12	16	22	22	15	
Whooping Cough	139	62	74	3	...	...	...	...	...	...	...	...	...	...
Mumps	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Diphtheria and Memb: Croup	105	8	64	26	2	2	1	...	1	...	...	1	...	...
Poliomyelitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Fever	3	1	1	...	...	...	...	...	1	...	...	...	...	...
Simple Cont: Fever	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	48	...	1	2	...	6	5	19	6	4	4	1	...	...
Asiatic Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Epidemic Diarrhœa	295	197	92	...	...	...	...	1	...	...	1	3	1	...
Diarrhœa	327	235	82	1	...	...	...	...	...	1	4	4	...	...
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malarial Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Actinomycosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pelagra	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Hydrophobia	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Glanders	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tetanus	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syphilis	58	37	5	...	...	1	...	6	6	2	1	...	...	...
Gonorrhœa, Strict: Urethra...	8	...	...	...	...	...	...	...	...	3	5	...	...	...
Puerperal.. Septicæmia	3	...	...	...	...	...	1	1	1	...	...	...	...	...
Puerperal.. Pyæmia	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal.. Phlegmasia Dol:	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal.. *Fever*	17	...	...	...	...	...	1	12	4	...	...	...	...	...
Infective Endocarditis	9	...	...	...	3	1	...	1	1	1	1	1	...	...
Epidemic Pneumonia / Pneumonic Fever	5	...	...	...	...	...	...	2	1	1	1	...	...	...
Erysipelas	24	5	...	1	...	2	1	...	3	4	3	4	1	...
Septicæmia (not puerp:)	4	...	...	...	...	...	...	1	1	...	2	...	...	...
Pyæmia (not puerp:)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phlegmon	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phagedæna	...	...	...	...	...	...	...	...	...	...	..	...	...	...
Other Septic Diseases	3	1	1	...	...	...	...	1	...	...	...	...	...	...
Tubercular Phthisis	943	8	23	11	22	56	72	181	248	186	91	40	5	...
Phthisis	113	...	2	...	1	6	14	30	20	26	13	1	...	...

TABLE A, 1913—*continued.*

CAUSES OF DEATH	All Ages	Under 5 Years: 0 to 1	Under 5 Years: 1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards
A.—General Diseases— *continued*														
Tubercular Meningitis	152	35	64	25	14	7	2	...	2	3	...	...	...	...
Tubercular Peritonitis	57	12	23	5	3	6	5	1	1	1	...	...	...	...
Tabes Mesenterica	35	19	13	2	...	...	...	...	1	...	...	...	...	...
Lupus	4	...	...	...	1	...	1	...	...	...	2	...	...	...
Tubercle of other organs	64	5	8	9	9	6	1	13	2	4	6	1	...	...
General Tuberculosis	71	10	12	7	11	11	1	4	7	6	1	1	...	...
Scrofula	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Starvation	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scurvy	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Alcoholism, Delirium Tremens	41	...	...	...	...	...	...	5	13	11	7	5	...	...
Opium, Morphia Habit	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ptomaine Poisoning	6	...	1	1	1	...	...	1	...	...	2	...	...	...
Industrial Poisoning: Lead	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Industrial Poisoning: Phosphorus	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Industrial Poisoning: Arsenic, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheum: Fever, Acute Rheum:	46	1	...	3	8	4	6	6	6	5	5	2	...	...
Rheumatism of Heart	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chronic Rheumatism	27	...	...	...	...	1	4	3	3	3	5	6	1	1
Rheum: Arthritis, Rheum: Gout	19	...	...	...	...	1	...	...	2	7	2	5	2	...
Gout	6	...	...	...	...	...	...	...	...	2	...	3	1	...
Carcinoma	557	...	...	...	...	...	2	10	72	115	178	143	33	4
Sarcoma	55	...	1	...	1	2	1	3	9	6	22	8	2	...
"*Cancer*," Malignant Disease	115	...	...	...	...	...	...	1	11	26	41	26	10	...
Rickets	36	13	22	1	...	...	...	...	...	...	...	...	...	...
Purpura	3	...	...	1	...	...	...	...	1	...	1	...	...	...
Hæmophilia, Hæm: Diathesis	1	1	...	...	...	...	...	...	...	...	...	...	...	...
Anæmia, Leucocythæmia	47	2	2	...	...	1	2	3	6	12	11	8	...	...
Diabetes Mellitus	75	...	1	...	2	2	5	10	7	5	22	20	1	...
Other Constitutional Diseases	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Premature Birth	389	389	...	...	...	...	...	...	...	...	...	...	...	...
Congenital Defects	84	76	5	3	...	...	...	...	...	...	...	...	...	...
Injury at Birth	30	30	...	...	...	...	...	...	...	...	...	...	...	...
Atelectasis	61	61	...	...	...	...	...	...	...	...	...	...	...	...
Want of Breast Milk	2	2	...	...	...	...	...	...	...	...	...	...	...	...
Teething	27	15	12	...	...	...	...	...	...	...	...	...	...	...
B.—Local Diseases.														
1.-NERVOUS SYSTEM.														
Inflammation of Brain	125	30	45	14	6	4	4	5	5	6	6	...	...	...
Softening of Brain	13	...	...	...	...	...	...	...	...	2	3	4	3	1
General Paraly: of Insane	73	...	...	...	...	...	...	12	25	24	9	2	1	...
Insanity (not puerperal)	146	...	...	...	1	3	4	3	8	8	34	55	26	4
Chorea	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Epilepsy	48	1	2	2	2	3	3	8	9	7	6	5	...	...
Convulsions	72	59	13	...	...	...	...	...	...	...	...	...	...	...
Laryngismus Stridulus	7	6	1	...	...	...	...	...	...	...	...	...	...	...
Locomotor Ataxy	11	...	...	...	...	...	...	...	3	2	4	2	...	...
Dis: of Spinal Cord	29	...	2	1	...	1	...	4	3	4	4	6	4	...
Neuritis	13	...	...	...	...	...	...	2	2	3	6	...	...	...
Brain Tumour	20	...	1	3	...	...	...	4	6	5	1	...	...	...
Nervous System (other Dis:)	17	...	4	...	...	1	...	2	1	1	1	6	1	...
2. DISEASES OF SPECIAL SENSE ORGANS.														
Otitis, Mastoid Disease	23	3	4	2	4	3	4	2	1	...	...	...	...	...
Epistaxis, Nose Disease	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Ophthalmia, Eye Disease	2	2	...	...	...	...	...	...	...	...	...	...	...	...

TABLE A, 1913—*continued.*

CAUSES OF DEATH	Ages at Death												
	All Ages	Under 5 Years		5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and
		0 to 1	1 to 5											
3. Diseases of Heart.														
Valvular Dis: Endocarditis	423	...	1	6	14	14	12	35	54	79	95	82	28	
Pericarditis	7	...	...	...	1	1	...	2	...	2	1	...	...	
Hypertrophy of Heart.....	5	...	...	...	...	...	...	...	...	...	...	4	1	
Angina Pectoris	28	...	...	...	...	...	...	1	2	3	9	9	4	
Dilatation of Heart	88	...	1	...	...	...	...	1	9	19	22	26	10	
Fatty Degen: of Heart	39	...	...	...	...	...	...	...	3	9	15	8	4	
Syncope, Heart Disease.....	422	1	...	1	4	7	5	17	42	77	120	98	42	
4. Dis: of Blood Vessels.														
Cerebral Hæmorrhage.....	374	2	2	1	...	2	2	2	22	61	105	113	57	
Apoplexy, Hemiplegia.....	123	1	1	...	...	...	...	3	13	15	33	33	23	
Aneurism	22	...	...	...	...	...	1	...	1	9	8	2	1	
Senile Gangrene	14	...	...	...	...	...	...	...	...	...	2	6	5	
Embolism, Thrombosis	56	...	...	...	...	1	...	3	1	10	10	20	11	
Phlebitis.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Varicose Veins	...	...	...	...	...	...	...	...	...	...	...	...	...	
Blood Vessels (Other Diseases)	96	...	...	...	...	...	...	...	2	11	21	42	17	
5. Dis: of Respiratory Sys:														
Laryngitis	17	4	7	2	...	...	...	1	1	2	...	...	...	
Memb: Laryng: (Not Diphth:)	...	...	...	...	...	...	...	...	...	...	...	...	...	
Croup.....	1	...	1	...	...	...	...	...	...	...	...	...	...	
Larynx (Other Dis:)	...	...	...	...	...	...	...	...	...	...	...	...	...	
Bronchitis	1,127	169	66	4	...	1	2	12	38	121	204	314	180	
Pneumonia { Lobar.....	353	21	35	11	3	8	12	44	60	59	57	38	4	
Pneumonia { Broncho.....	656	235	267	20	6	...	3	3	13	31	32	34	10	
"*Pneumonia*".....	169	17	23	3	5	7	2	9	25	19	27	23	7	
Emphysema, Asthma	22	...	...	...	...	...	...	1	3	4	6	6	2	
Pleurisy	38	4	4	1	...	2	2	4	3	6	5	5	2	
Fibroid Disease of Lung.....	5	...	...	...	...	...	...	...	1	2	...	1	1	
Respiratory Dis: (Other)	38	4	1	...	...	...	...	2	4	7	7	5	7	
6. Dis: of Digestive Sys:														
Tonsillitis, Quinsy	9	1	1	3	1	...	...	1	...	2	...	...	...	
Mouth, Pharynx	15	10	1	2	...	2	...	...	...	...	...	...	...	
Gastric Ulcer.....	55	...	...	...	...	1	5	16	9	12	8	3	...	
Gastric Catarrh.....	16	9	2	...	...	...	...	2	1	2	...	...	...	
Stomach (Other Dis:).....	83	47	9	1	1	...	...	1	3	8	4	4	5	
Enteritis.....	14	...	1	...	1	...	...	2	2	3	2	2	1	
Gastro-Enteritis.....	15	...	5	3	...	...	...	...	1	1	2	2	1	
Appendicitis, Perityph:	45	...	2	7	8	9	4	6	1	5	1	1	1	
Hernia	55	3	1	...	...	...	...	1	7	9	8	20	6	
Intestinal Obstruct:.....	28	7	1	1	...	...	...	1	5	1	5	5	2	
Other Diseases of Intestines ...	28	11	2	...	1	1	2	1	1	3	2	4	...	
Peritonitis	18	1	4	...	1	...	1	2	2	4	1	1	1	
Cirrhosis of Liver.....	101	...	...	...	...	...	...	4	16	43	22	16	...	
Liver and Gall Bladder (O. D.).	36	23	1	...	...	...	...	2	1	3	4	...	2	
Digestive System (Other Dis:)...	39	21	3	2	...	...	...	1	1	4	4	2	1	
7. Dis: of Lymphatic and Ductless Glands.														
Spleen, Disease of.....	1	...	1	...	...	...	...	...	...	...	...	...	...	
Lymphat: Syst: (Other Dis:)...	29	1	2	6	2	1	2	5	3	4	...	2	1	
Thyroid Body (Other Dis:) ...	6	...	...	...	...	1	1	...	...	2	1	1	...	
Supra Renal Caps: (Dis: of)...	4	...	...	...	...	...	...	2	...	2	...	...	...	
8. Diseases of Urinary System.														
Nephritis Ac:, Uræmia	85	2	7	8	3	...	4	6	11	23	8	11	1	
Ch: Bright's Dis: Albumin: ...	216	2	1	...	1	2	7	17	32	42	55	46	10	
Calculus	15	...	...	...	...	...	...	...	...	5	6	2	2	
Bladder and Prostate Dis: ...	37	...	...	...	...	...	...	...	1	4	13	11	6	
Urinary Syst: (Other Dis:) ...	22	2	...	...	...	...	...	1	1	6	5	4	3	

TABLE A, 1913—*concluded.*

CAUSES OF DEATH	All Ages	Under 5 Years: 0 to 1	Under 5 Years: 1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards
	Ages at Death													
9. Diseases of Generative System.														
Ovarian Tumour	8	...	...	...	...	...	1	2	2	...	2	1	...	...
Other Dis : of Ovary	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Uterine Tumour	6	...	...	...	...	...	1	...	2	3	...	...	...	...
Other Dis: of Uterus and Vagina	5	...	...	...	...	...	...	...	1	2	1	...	1	...
Disord: of Menstruation	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gener: and Mam: Orgs: (other)	9	2	...	...	...	1	...	2	3	...	...	1	...	...
10. Diseases of Pregnancy and Childbirth.														
Abortion, Miscarriage	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Puerperal Mania	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Puerperal Convulsions	14	...	...	...	...	...	1	10	3	...	...	...	...	...
Placenta Prævi: Flooding	16	...	...	...	...	...	1	8	7	...	...	...	...	...
Other Ac: of Preg: & Childbirth	11	...	...	...	...	...	3	4	4	...	...	...	...	...
11. Diseases of Locomotor System.														
Caries, Necrosis	1	1	...	...	...	...	...	...	...	...	...	...	...	...
Arthritis, Periostitis	4	...	...	...	...	...	...	1	...	...	1	1	1	...
Locomotor Sys : (Other)	10	...	3	1	1	1	...	...	...	1	2	1	...	...
12. Diseases of the Skin.														
Ulcer, Bedsore	4	1	...	...	...	...	...	1	...	...	2	...	...	...
Eczema	3	3	...	...	...	...	...	...	...	...	...	...	...	...
Pemphigus	4	4	...	...	...	...	...	...	...	...	...	...	...	...
Skin Diseases (other)	15	2	1	...	...	2	...	1	2	1	2	1	3	...
C.—Other Specified Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
D.—Ill-defined and not Specified Diseases.														
Atrophy, Debility	350	323	26	1	...	...	...	...	...	...	...	...	...	...
Old Age	435	...	...	...	...	...	...	...	...	1	23	140	212	59
Dropsy, Ascites, Anasarca	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tumour	8	...	...	...	...	...	...	...	2	...	6	...	...	...
Abscess	2	1	...	...	...	...	...	...	...	1	...	...	...	...
Hæmorrhage	3	2	...	...	...	...	...	...	...	...	1	...	...	...
Sudden (cause unascertained)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Ill-defined	3	3	...	...	...	...	...	...	...	...	...	...	...	...
E.—Violent Deaths.														
1. Accident.														
In Mines and Quarries	1	...	...	...	...	1	...	...	...	...	...	...	...	...
By Vehicles { On Railways	15	...	...	...	1	...	4	4	1	4	...	...	...	1
By Vehicles { In Streets	40	...	3	8	5	1	2	2	4	5	4	3	3	...
Ships, Boats, Docks (not Drowning)	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Building Operations	3	...	...	...	...	...	...	1	...	2	...	...	...	...
Machinery	12	...	...	...	1	1	2	3	2	2	1	...	...	...
Weapons and Implements	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burns and Scalds	82	3	39	15	3	...	1	...	4	6	2	6	2	1
Poison, Poisonous Vapours	9	...	...	...	...	...	...	2	1	2	2	1	1	...
Drowning	42	3	4	6	1	1	...	6	10	6	4	1	...	...
Suffocation	104	98	2	...	1	...	...	...	1	...	2	...	...	...
Falls	92	1	3	2	1	3	2	8	17	13	17	15	9	1
Weather Agencies	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Otherwise or not Stated	33	...	2	4	...	...	2	4	7	7	6	...	1	...
2. Homicide.	7	1	...	...	1	...	1	1	1	2	...	...	...	...
3. Suicide.	68	...	...	...	1	5	3	11	14	20	9	4	1	...
4. Execution.	1	...	...	...	...	...	...	...	...	1	...	...	...	...

TABLE B.—MANCHESTER, 1913.

Causes of Deaths at Different Life Periods—MALES.

Classes	CAUSES OF DEATH	All Ages Total	Ages at Death—in years: Under 5 Years 0 to 1	Under 5 Years 1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and
	All Causes	6183	1393	716	154	78	100	105	356	545	758	839	781	321	3
A	Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	.
	Measles	120	27	83	10	...	...	...	...	...	...	...	...	...	.
	Scarlet Fever	52	1	30	16	1	4	...	...	...	...	...	...	...	.
	Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	.
	Whooping Cough	63	27	34	2	...	...	...	...	...	...	...	...	...	.
	Diphtheria, Memb: Croup	46	4	28	10	...	2	1	...	...	...	...	1	...	.
	Ill-defined Fever	1	...	1	...	...	...	...	...	...	...	...	...	...	.
	Enteric Fever	35	...	...	1	...	5	4	15	5	2	2	1	...	.
	Influenza	66	5	4	2	...	3	1	7	7	10	11	10	5	
	Epidemic Diarrhœa	167	105	58	...	...	...	...	...	...	...	1	2	1	.
	Diarrhœa, Dysen., Simple Chol.	185	138	41	1	...	...	...	...	...	...	1	4	...	.
	Venereal Affections	44	24	2	...	...	...	...	3	5	4	6	...	...	.
	Erysipelas	14	4	...	1	...	1	1	...	2	2	1	2	...	.
	Pyæmia, Septicæmia	3	1	...	...	...	...	...	1	...	...	1	...	...	.
	Puerperal Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	.
	Other Zymotics	3	2	1	...	...	...	...	...	...	...	...	...	...	.
	Tuberc. Periton: Tabes Mes:	57	18	22	4	3	4	4	...	1	1	...	...	...	.
	Tubercular Meningitis	95	27	40	14	8	3	...	...	1	2	...	...	...	.
	Phthisis	624	4	10	4	3	19	36	118	168	154	75	30	3	.
	Tuberculous Dis. (other)	85	9	14	11	11	8	...	10	6	10	4	2	...	.
	Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	.
	Alcoholism	20	...	...	...	...	...	...	1	9	3	4	3	...	.
	Rheumatic Fever	20	1	...	2	2	1	1	3	3	4	2	1	...	
	Cancer	318	...	...	...	...	2	1	8	33	66	127	68	13	.
	Premature Birth	213	213	...	...	...	...	...	...	...	...	...	...	...	.
	Atelectasis	40	40	...	...	...	...	...	...	...	...	...	...	...	.
	Congenital Defects	76	71	3	2	...	...	...	...	...	...	...	...	...	.
	Epilepsy	26	1	2	1	...	1	2	3	5	5	2	4	...	.
	Convulsions	37	31	6	...	...	...	...	...	...	...	...	...	...	.
	Nervous Syst: (other)	247	13	32	9	4	4	2	20	32	33	38	44	16	.
	Cereb: Haem: Apoplexy, Hemip:	235	1	2	...	...	1	1	2	18	40	66	71	30	.
	Heart and Blood Vessel Dis:	574	1	2	3	6	9	11	26	52	100	148	161	52	.
B and C	Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	.
	Bronchitis	544	95	30	2	...	1	1	7	24	55	111	143	69	.
	Pneumonia	708	160	176	17	12	8	10	38	67	76	78	54	9	.
	Respiratory Dis: (other)	69	6	8	2	...	...	2	6	6	12	12	8	7	.
	Digestive Syst: (other)	302	78	18	12	9	8	5	26	27	47	27	32	12	.
	Urinary Syst: (other)	210	4	5	2	3	2	4	10	17	52	57	40	12	.
	Generative Organs	3	2	...	...	...	...	...	...	...	...	...	1	...	.
	Other specified Diseases	176	34	28	5	7	7	5	16	9	21	19	20	5	.
D	Marasmus and Atrophy	205	192	13	...	...	...	..	...	...	...	...	...	...	...
	Old Age	171	...	...	...	...	...	...	...	...	...	11	64	79	.
	Other Ill-defined Causes	11	3	...	...	...	...	...	...	2	...	6	...	...	.
E	Violence	263	51	23	21	8	6	11	27	35	38	24	11	7	.
	Homicide	4	...	...	...	1	...	...	...	1	2	...	...	...	.
	Suicide	50	...	...	...	...	1	2	9	10	18	5	4	1	.
	Execution	1	...	...	...	...	...	...	...	...	1	...	...	...	.

TABLE C.—MANCHESTER, 1913.

Causes of Deaths at Different Life Periods—FEMALES.

Classes	CAUSES OF DEATH	All Ages Total	Ages at Death—in years: Under 5 Years 0 to 1	Under 5 Years 1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards
	All Causes	5535	1059	637	132	86	117	131	297	450	568	706	786	480	86
A	Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Measles	139	43	91	5	...	...	...	...	...	...	...	...	...	...
	Scarlet Fever	42	1	25	11	4	...	...	1	...	...	...	...	...	...
	Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Whooping Cough	76	35	40	1	...	...	...	...	...	...	...	...	...	...
	Diphtheria, Memb: Croup	59	4	36	16	2	...	...	...	1	...	...	...	...	...
	Ill-defined Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	..
	Enteric Fever	13	...	1	1	...	1	1	4	1	2	2	...	...	...
	Influenza	56	1	...	...	...	2	4	3	5	6	11	12	10	2
	Epidemic Diarrhœa	128	92	34	...	...	...	...	1	...	...	...	1	...	...
	Diarrhœa, Dysentery, Simple Cholera	142	97	41	...	...	...	...	...	...	1	3	...	...	...
	Venereal Affections	22	13	3	...	...	1	...	3	1	1	...	...	...	...
	Erysipelas	10	1	...	...	...	1	...	...	1	2	2	2	1	...
	Pyæmia, Septicæmia	4	...	1	...	...	...	...	1	1	...	1	...	...	...
	Puerperal Fever	20	...	...	...	...	...	2	13	5	...	...	...	...	...
	Other Zymotics	2	1	...	...	...	...	...	...	1	...	...	...	...	...
	Tubercular Periton: Tabes Mes.	35	13	14	3	...	2	1	1	1	...	...	...	...	...
	Tubercular Meningitis	57	8	24	11	6	4	2	...	1	1	...	...	...	...
	Phthisis	432	4	15	7	20	43	50	93	100	58	29	11	2	...
	Tuberculous Diseases (other)	54	6	6	5	10	9	3	7	3	...	5	...	...	...
	Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Alcoholism	21	...	...	...	...	...	...	4	4	8	3	2	...	...
	Rheumatic Fever	26	...	...	1	6	3	5	3	3	1	3	1	...	...
	Cancer	409	...	1	...	1	...	2	6	59	81	114	109	32	4
	Premature Birth	176	176	...	...	...	...	...	...	...	...	...	...	...	...
	Atelectasis	21	21	...	...	...	...	...	...	...	...	...	...	...	...
	Congenital defects	38	35	2	1	...	...	...	...	...	...	...	...	...	...
B and C	Epilepsy	22	...	...	1	2	2	1	5	4	2	4	1	...	...
	Convulsions	35	28	7	...	...	...	...	...	...	...	...	...	...	...
	Nervous System (other)	208	23	21	9	3	6	6	12	21	22	30	31	19	5
	Cerebral Hœmorrhage, Apoplexy, and Hemiplegia	262	2	1	1	...	1	1	3	17	36	72	75	50	3
	Heart and Blood Vessel Diseases	626	...	...	4	13	14	7	33	62	119	155	136	71	12
	Croup	1	...	1	...	...	...	...	...	...	...	...	...	...	...
	Bronchitis	583	74	36	2	...	...	1	5	14	66	93	171	111	10
	Pneumonia	470	113	149	17	2	7	7	18	31	33	38	41	12	2
	Respiratory Diseases (other)	51	6	4	1	...	2	...	2	6	9	6	9	5	1
	Digestive System (other)	255	55	15	7	4	5	7	14	23	53	36	28	8	...
	Urinary System (other)	165	2	3	6	1	...	7	14	28	28	30	34	10	2
	Generative Organs and Childbirth	69	...	...	...	...	2	7	28	22	5	3	1	1	...
	Other specified Diseases	199	16	23	7	6	7	13	17	19	21	35	29	5	1
D	Marasmus and Atrophy	145	131	13	1	...	...	..	...	...	...	...	...	...	...
	Old Age	264	...	...	...	...	...	...	...	...	1	12	76	133	42
	Other Ill-defined Causes	5	3	...	...	...	...	...	...	...	1	1	...	...	...
E	Violence	172	54	30	14	5	1	2	3	12	9	14	16	10	2
	Homicide	3	1	...	...	...	...	1	1	...	...	...	...	...	...
	Suicide	18	...	...	...	1	4	1	2	4	2	4	...	...	...
	Execution	...	..	...	...	...	...	...	...	...	...	...	...	...	...

TABLE D.

City of Manchester, 1913.—Causes of Death in Infancy and Childhood.

Causes of Death	Under One Year			Total under One Year	One and under Five Years				Total under Five Years
	Under 3 months	3–6 months	6–12 months		1–	2–	3–	4–	
All Causes	1,311	465	676	2,452	778	269	169	137	3,805
Measles	5	3	62	70	98	37	20	19	244
Scarlatina	...	...	2	2	13	14	11	17	57
Whooping Cough	11	16	35	62	42	13	13	6	136
Diphtheria (Memb: Croup)	...	...	8	8	16	16	14	18	72
Fever (various forms)	...	...	...	...	1	...	...	1	2
Diarrhœal Diseases	134	163	135	432	154	17	2	1	606
Syphilis	33	3	1	37	3	2	...	...	42
Tabes Mesenterica and Tuberc. Peritonitis	3	16	12	31	18	10	4	4	67
Tubercular Meningitis	6	9	20	35	27	17	12	8	99
Tuberculosis (other)	4	6	13	23	25	9	6	5	68
Premature Birth	382	5	2	389	...	...	...	...	389
Teething	...	1	14	15	10	2	...	...	27
Convulsions	43	7	9	59	9	3	1	...	72
Brain Diseases (other)	8	11	18	37	23	10	18	4	92
Lung Diseases	104	107	243	454	257	80	42	25	858
Atrophy, Marasmus	224	59	40	323	22	1	2	1	349
Found Dead in Bed (overlaid)	71	9	5	85	...	...	..	...	85
Suffocation	10	3	...	13	2	...	...	...	15
Violence (other forms)	5	2	1	8	15	19	5	12	59
Ill-defined Causes	6	...	...	6	...	...	...	...	6
Unclassified	262	45	56	363	43	19	19	16	460

TABLE E, 1881 TO 1913.—MANCHESTER.—ESTIMATED POPULATIONS. ANNUAL RATES OF MARRIAGES, BIRTHS, AND DEATHS *(a)* from all causes, and *(b)* from specified causes; also the percentages to total deaths of Inquest Cases, and of Deaths in Public Institutions; also the quinquennial averages from 1871–1910, with the average for same period.

Years	Estimated Populations (Mean)	Persons Married	Annual Rates per 1,000 Persons living: Births	Deaths (All Causes)	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Typhus Fever	Enteric Fever	Simple Continued Fever	Diarrhœa and Dysentery	English Cholera	Violence	Percentage to Total Deaths: Inquest Cases	Deaths in Public Institutions	Years
Quinquennial Averages: 1871–1875	477,344	24·6	38·9	28·3	0·26	0·64	1·08	0·08	0·78	0·14	0·43	0·21	1·92	0·03	0·94	7·2	13·4	1871–1875
1876–1880	509,802	18·6	38·7	26·2	0·24	0·53	1·07	0·13	0·84	0·08	0·29	0·11	1·22	0·04	0·89	7·5	14·3	1876–1880
1881–1885	542,746	17·9	35·1	23·6	0·04	0·71	0·48	0·10	0·68	0·05	0·20	0·03	0·96	0·03	0·72	7·0	15·9	1881–1885
1886–1890	575,630	16·6	33·4	24·6	0·02	0·83	0·50	0·32	0·54	0·02	0·30	0·01	1·06	0·02	0·78	6·9	17·7	1886–1890
1891–1895	517,801	16·9	33·2	23·6	0·03	0·62	0·26	0·27	0·64	0·00	0·24	0·01	1·14	0·05	0·77	7·1	19·2	1891–1895
1896–1900	539,599	18·2	32·5	22·7	...	0·89	0·20	0·13	0·53	0·00	0·18	0·01	1·65	0·04	0·73	7·1	20·2	1896–1900
1901–1905	554,355	17·4	30·9	20·1	0·01	0·55	0·19	0·22	0·41	0·00	0·13	0·00	1·15		0·72	7·1	24·4	1901–1905
1906–1910	660,049	17·0	28·1	17·7	...	0·54	0·16	0·17	0·37	0.00	0·10	0·00	0·76		0·68	7·4	27·3	1906–1910
Avge. 40 yrs. 1871–1910	562,739	17·6	32·6	22·4	0·03	0·66	0·35	0·20	0·55	0·02	0·20	0·02	1·17		0·74	7·1	21·0	1871–1910 Avge. 40 yrs.
1881	530,051	17·8	35·9	22·8	0·03	0·29	0·34	0·09	0·71	0·03	0·17	0·06	0·73	0·02	0·84	8·1	15·9	1881
1882	536,324	18·8	35·7	24·0	0·05	0·89	0·34	0·11	0·87	0·10	0·25	0·04	1·00	0·03	0·67	7·2	14·5	1882
1883	542,671	17·8	34·9	24·4	0·01	0·71	0·81	0·11	0·62	0·05	0·20	0·03	0·95	0·03	0·73	7·0	15·5	1883
1884*	549,093	18·0	34·4	23·4	0·01	0·57	0·74	0·08	0·49	0·03	0·19	0·03	1·46	0·05	0·65	6·2	17·3	1884*
1885	555,591	17·0	34·8	23·6	0·08	1·08	0·17	0·10	0·71	0·04	0·17	0·01	0·64	0·02	0·69	6·4	16·4	1885
1886	562,166	16·4	34·7	24·1	0·00	0·27	0·41	0·15	0·57	0·03	0·29	0·01	1·34	0·04	0·71	7·2	17·0	1886
1887	568,819	16·6	33·9	25·4	0·01	1·54	0·63	0·23	0·50	0·02	0·31	0·01	1·19	0·02	0·77	6·9	16·1	1887
1888	575,550	16·0	33·3	23·3	0·07	0·27	0·42	0·36	0·79	0·02	0·33	0·02	0·71	0·01	0·74	6·7	18·3	1888
1889	582,362	17·0	33·1	24·2	0·00	1·22	0·45	0·51	0·45	0·01	0·31	0·01	1·00	0·03	0·89	6·5	18·2	1889
1890*	589,253	17·0	31·8	26·2	...	0·83	0·60	0·36	0·37	0·01	0·27	0·02	1·04	0·02	0·79	7·0	19·1	1890*

TABLE E—*Continued.*

Years	Estimated Populations (Mean)	Persons Married	Annual Rates per 1,000 Persons living: Births	Deaths (All Causes)	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Typhus Fever	Enteric Fever	Simple Continued Fever	Diarrhœa and Dysentery	English Cholera	Violence	Percentages to Total Deaths: Inquest Cases	Deaths in Public Institutions	Years
1891†	‡ 508,673	17·2	33·8	26·0	...	0·43	0·22	0·25	1·02	0·01	0·37	0·01	0·81	0·04	0·79	6·8	18·4	1891†
1892†	‡ 513,196	17·2	33·4	23·2	0·00	0·72	0·27	0·25	0·72	0·00	0·24	0·01	0·79	0·02	0·77	7·4	18·2	1892†
1893†	‡ 517,760	16·0	33·4	24·3	0·09	0·57	0·27	0·35	0·46	0·00	0·25	0·01	1·75	0·10	0·76	6·9	18·7	1893†
1894†	‡ 522,365	16·8	31·8	19·8	0·04	0·42	0·22	0·29	0·55	...	0·17	0·01	0·70	0·02	0·75	7·5	21·3	1894†
1895†	‡ 527,010	17·4	33·4	24·5	0·00	0·96	0·33	0·21	0·47	...	0·18	0·01	1·66	0·06	0·80	6·9	19·2	1895†
1896†*	‡ 531,697	18·3	32·8	22·0	...	1·05	0·37	0·15	0·66	0·00	0·22	0·01	1·04	0·02	0·71	7·4	19·7	1896†*
1897†	‡ 536,426	17·8	32·9	22·4	...	1·17	0·23	0·08	0·56	0·00	0·18	0·00	1·74	0·06	0·68	6·6	20·0	1897†
1898†	‡ 541,296	18·3	32·3	21·2	...	0·50	0·12	0·09	0·31	...	0·22	0·01	1·96	0·06	0·69	7·0	19·5	1898†
1899†	‡ 546,010	18·4	32·2	23·9	...	1·28	0·08	0·16	0·42	0·00	0·13	0·01	2·02	0·03	0·78	7·0	19·7	1899†
1900†	‡ 542,566	18·0	32·4	23·8	...	0·47	0·19	0·19	0·68	...	0·14	0·01	1·49	0·03	0·78	7·4	21·9	1900†
1901†	‡ 546,408	17·6	28·7	21·6	...	0·53	0·23	0·24	0·41	0·02	0·14	0·00	1·86		0·78	7·9	23·2	1901†
1902†*	‡ 550,355	18·1	33·0	20·0	...	0·44	0·27	0·22	0·44	...	0·12	...	0·54		0·73	7·6	23·8	1902†*
1903†	‡ 554,331	17·8	31·7	19·5	0·04	0·62	0·17	0·25	0·38	...	0·17	0·00	0·91		0·72	7·0	25·3	1903†
1904†	‡ 558,335	16·5	31·1	20·9	0·02	0·76	0·15	0·18	0·50	...	0·12	0·00	1·36		0·73	5·9	24·6	1904†
1905§	‡ 631,933	17·0	29·0	17·8	...	0·37	0·12	0·20	0·31	...	0·09	0·01	1·15		0·59	6·7	24·1	1905§
1905‖	562,346	...	30·1	18·7	...	0·40	0·13	0·22	0·34	...	0·09	0·01	1·27		0·65	6·9	24·9	1905‖
1906§	637,520	18·0	28·9	19·0	...	0·75	0·17	0·19	0·30	...	0·13	0·00	1·54		0·62	7·3	25·4	1906§
1906‖	566,409	...	30·1	19·9	...	0·83	0·19	0·20	0·33	...	0·14	0·00	1·66		0·66	7·3	26·2	1906‖
1907§	643,158	18·3	28·4	17·9	...	0·36	0·16	0·16	0·49	...	0·06	0·00	0·45		0·67	8·0	26·5	1907§
1907‖	570,506	...	29·4	18·7	...	0·39	0·18	0·18	0·52	...	0·06	0·00	0·50		0·71	8·1	27·4	1907‖
1908§*	648,846	16·7	28·9	18·1	...	0·56	0·14	0·19	0·33	...	0·11	...	0·90		0·71	7·4	26·0	1908§*
1908‖*	574,637	...	30·0	18·8	...	0·60	0·16	0·20	0·35	...	0·12	...	0·99		0·76	7·6	27·0	1908‖*
1909§	654,584	15·4	27·5	17·7	...	0·60	0·25	0·17	0·20	0·00	0·13	0·00	0·41		0·73	7·3	29·6	1909§
1909‖	578,803	...	28·5	18·4	...	0·67	0·27	0·19	0·21	0·00	0·15	0·00	0·45		0·77	7·5	30·6	1909‖
1910§§	716,137	16·7	26·8	15·9	...	0·41	0·10	0·14	0·55	0·00	0·09	...	0·49		0·66	7·1	29·0	1910
1910¶	578,266	...	27·8	16·9	...	0·46	0·12	0·16	0·61	0·00	0·09	...	0·55		0·72	7·3	30·8	1910
1911	716,734	16·3	25·9	17·1	...	0·47	0·06	0·12	0·20	0·00	0·07	...	1·60		0·67	7·2	28·6	1911
1912	724,168	17·1	25·1	16·2	0·00	0·68	0·07	0·13	0·41	...	0·06	...	0·38		0·65	8·0	30·5	1912
1913*	731,556	17·3	25·6	15·8	...	0·35	0·13	0·14	0·19	...	0·06	0·00	0·84		0·69	8 2	30·8	1913

* The facts for these years are for 53 instead of 52 weeks; corrections have, therefore, been made in calculating the rates.

† The populations and rates for the years subsequent to 1890, except the marriage rates, relate to the City of Manchester as enlarged by the Act of that year. The facts and rates for previous years are those for the three Unions of Manchester, Chorlton, and Prestwich, which have been taken to approximately represent "Manchester."

‡ These figures include a proportion of the inmates of certain Extra-municipal Institutions which receive patients from the City of Manchester, and are therefore in excess of the estimates of the Registrar-General.

§ Includes the newly amalgamated districts of Moss Side and Withington. ‖ Exclusive of Moss Side and Withington.

§§ Includes Moss Side, Withington, Gorton, and Levenshulme. ¶ Exclusive of Moss Side, Withington, Gorton, and Levenshulme.

TABLE F, 1881 to 1913.—Manchester.

Annual Rates of Mortality from certain causes of death.

Year	Annual Rates per 1,000 Persons living										Rates per 1,000 Births	
	Cancer	Tuber: Peritonitis Tabes Mes:	Phthisis	Other Tuber: Diseases	Diseases of Nervous System	Diseases of Circulatory System	Diseases of Respiratory System	Diseases of Digestive System	Diseases of Urinary System	Diseases of Generative System	Puerperal Fever	Childbirth
1881–1885	0·50	0·35	2·42	0·57	3·28	1·37	5·41	1·23	0·48	0·08	3·03	1·99
1886–1890	0·64	0·36	2·24	0·59	3·09	1·73	5·76	1·23	0·61	0·08	3·22	2·13
1891–1895	0·62	0·22	2·09	0·75	1·74	2·53	5·56	1·07	0·52	0·07	2·75	3·42
1896–1900	0·73	0·19	2·04	0·63	1·32	2·54	5·03	1·04	0·49	0·09	1·55	1·51
1901–1905	0·80	0·16	1·94	0·55	1·17	2·56	4·29	0·95	0·49	0·08	1·21	1·76
1906–1910	0·88	0·14	1·65	0·45	0·95	2·56	3·75	0·84	0·54	0·07	1·28	1·49
1881–1910	0·73	0·24	2·06	0·60	1·92	2·21	4·96	1·06	0·52	0·08	2·17	2·06
1881	0·48	0·28	2·46	0·52	3·33	1·19	5·57	1·24	0·39	0·07	3·15	1·37
1882	0·44	0·40	2·41	0·61	3·35	1·34	5·33	1·19	0·45	0·08	3·92	1·62
1883	0·54	0·34	2·54	0·59	3·32	1·33	5·66	1·20	0·50	0·06	2·27	1·58
*1884	0·51	0·39	2·34	0·56	3·27	1·44	4·88	1·23	0·59	0·10	2·81	2·55
1885	0·51	0·36	2·34	0·56	3·12	1·53	5·59	1·28	0·49	0·08	3·05	2·84
1886	0·56	0·43	2·44	0·59	3·30	1·53	5·43	1·26	0·57	0·08	2·67	1·85
1887	0·62	0·39	2·19	0·53	3·17	1·66	5·72	1·23	0·53	0·08	3·58	1·35
1888	0·65	0·31	2·14	0·62	3·19	1·72	5·31	1·16	0·62	0·10	4·12	1·77
1889	0·70	0·36	2·12	0·59	2·94	1·79	5·06	1·28	0·64	0·08	3·06	1·87
*1890	0·65	0·33	2·33	0·62	2·87	1·93	7·28	1·22	0·66	0·08	2·68	3·89
†1891	0·63	0·25	2·20	0·78	2·30	2·69	6·77	1·03	0·55	0·07	3·08	4·01
1892	0·61	0·21	2·05	0·75	1·70	2·59	5·44	1·14	0·53	0·05	3·79	4·54
1893	0·59	0·26	2·05	0·76	1·70	2·48	5·53	1·20	0·53	0·07	3·70	3·94
1894	0·66	0·18	1·97	0·67	1·48	2·31	4·35	0·96	0·49	0·04	1·93	2·77
1895	0·63	0·22	2·16	0·77	1·51	2·60	5·73	1·04	0·49	0·11	1·25	1·82
*1896	0·66	0·13	2·00	0·60	1·33	2·53	5·19	1·04	0·46	0·11	0·96	1·47
1897	0·74	0·22	2·12	0·67	1·35	2·45	4·51	1·03	0·51	0·10	2·10	1·36
1898	0·73	0·19	1·95	0·67	1·22	2·15	4·27	1·00	0·54	0·09	1·72	1·54
1899	0·75	0·24	2·05	0·61	1·34	2·73	5·47	0·99	0·47	0·10	1·37	1·54
1900	0·76	0·17	2·09	0·60	1·37	2·82	5·78	1·15	0·48	0·05	1·59	1·65
1901	0·78	0·20	2·09	0·83	1·22	2·55	4·48	1·00	0·49	0·03	2·17	1·72
*1902	0·79	0·16	2·08	0·55	1·13	2·61	4·71	0·93	0·58	0·11	0·94	1·65
1903	0·76	0·18	1·85	0·58	1·25	2·46	3·95	0·99	0·46	0·08	0·80	1·59
1904	0·81	0·15	1·98	0·54	1·17	2·71	4·38	1·02	0·50	0·09	1·04	2·13
‖1905	0·86	0·12	1·56	0·48	1·06	2·47	3·70	0·81	0·41	0·09	1·09	1·80
§1905	0·86	0·13	1·68	0·50	1·10	2·49	3·94	0·83	0·42	0·10	1·12	1·71
‖1906	0·88	0·14	1·71	0·49	1·06	2·68	3·52	0·91	0·47	0·07	1·63	1·63
§1906	0·89	0·15	1·81	0·52	1·09	2·69	3·75	0·95	0·46	0·08	1·76	1·70
‖1907	0·77	0·15	1·70	0·41	1·01	2·53	4·30	0·80	0·56	0·07	1·09	1·26
§1907	0·78	0·16	1·80	0·44	1·04	2·56	4·58	0·83	0·55	0·07	1·07	1·19
‖1908*	0·89	0·12	1·65	0·47	0·96	2·52	3·91	0·87	0·59	0·06	1·16	1·31
§1908*	0·87	0·12	1·74	0·47	0·97	2·55	4·19	0·89	0·58	0·06	1·14	1·37
‖1909	0·93	0·13	1·70	0·44	0·87	2·75	3·90	0·85	0·52	0·09	0·94	1·94
§1909	0·91	0·13	1·81	0·45	0·90	2·75	4·14	0·86	0·51	0·10	0·97	2·06
§§1910	0·92	0·15	1·49	0·43	0·84	2·33	3·13	0·77	0·54	0·07	1·56	1·30
‡‡1910	0·95	0·15	1·64	0·46	0·89	2·39	3·44	0·76	0·58	0·06	1·50	1·25
1911	1·05	0·13	1·56	0·39	0·88	2·17	3·43	0·61	0·58	0·08	1·40	1·61
1912	1·00	0·10	1·53	0·44	0·76	2·29	3·78	0·60	0·52	0·09	1·10	2·15
1913	0·98	0·12	1·42	0·39	0·77	2·28	3·26	0·75	0·50	0·10	1·05	2·26

* The facts for these years are for 53 instead of 52 weeks; corrections have therefore been made in calculating the rates.

† The rates of mortality for the years subsequent to 1890 refer to the City of Manchester as enlarged by the Act of that year. The rates for 1890 and for previous years are those for the three Unions of Manchester, Chorlton, and Prestwich, which have been taken to approximately represent "Manchester."

‖ Includes the districts of Moss Side and Withington.

§ Exclusive of Moss Side and Withington. §§‡‡ See references to Table E.

TABLE G, 1913.—POPULATION, AREA, DENSITY. TOTAL BIRTHS AND DEATHS WITH BIRTH AND DEATH RATES.

[INSTITUTION POPULATIONS, BIRTHS AND DEATHS, DISTRIBUTED.]

STATISTICAL DIVISIONS		* Estimated Population	Area in Acres	Persons to an Acre	BIRTHS		DEATHS		Natural Rate of Increase	Mean Death Rate 1903-1912	Percentage
					Total	Rate per 1,000	Total	Rate per 1,000			
City of Manchester...		**731,556**	**20,799**	**35**	**19,052**	**25·64**	**11,718**	**15·77**	**9·87**	**18·00**	**1.**
I.	ManchesterTownship	112,599	1,646	68	3,518	30·76	2,732	23·89	6·87	24·90	
II.	North Manchester ...	205,321	7,321	28	5,401	25·90	2,843	13·63	12·27	14·92	
III.	South Manchester ...	413,636	11,832	35	10,133	24·12	6,143	14·62	9·50	17·22	1
I.	Ancoats	40,259	400	101	1,326	32·43	930	22·74	9·69	24·86	
	Central	21,409	748	29	528	24·28	525	24·14	0·14	26·36	
	St. George's.....	50,931	498	102	1,664	32·16	1,277	24·68	7·48	24·27	–
II.	Cheetham	43,640	919	48	962	21·70	493	11·12	10·58	11·86	
	Crumpsall	10,436	733	14	183	17·22	119	11·20	6·02	13·18	1
	Blackley	14,421	1,840	8	340	23·21	159	10·85	12·36	16·31	3.
	Harpurhey	17,379	193	90	480	27·19	267	15·13	12·06	13·13	-1
	Moston	25,487	1,297	20	667	25·76	273	10·55	15·21	11·72	
	Newton Heath	42,447	1,350	31	1,163	26·97	674	15·63	11·34	17·65	1
	Bradford	25,460	288	88	810	31·32	459	17·75	13·57	19·19	
	Beswick	12,130	96	126	377	30·60	209	16·96	13·64	18·15	
	Clayton	13,894	605	23	419	29·69	190	13·46	16·23	13·70	
III.	Ardwick	39,745	509	78	1,157	28·66	720	17·83	10·83	17·39	–
	Openshaw	31,674	581	55	913	28·38	525	16·32	12·06	18·76	1
	Gorton (West).....	26,958	318	85	807	29·47	429	15·67	13·80	16·75	
	Rusholme and Kirk.	42,393	1,412	30	816	18·95	480	11·15	7·80	14·27	2
	Chorlton-upon-Med...	54,504	646	84	1,219	22·02	999	18·04	3·98	19·19	
	Hulme.....	63,065	477	132	1,896	29·60	1,227	19·16	10·44	22·44	1
	Moss Side	35,119	421	83	529	14·83	400	11·21	3·62	13·29	1
	Withington	53,869	5,728	9	1,061	19·39	549	10·03	9·36	10·46	
	Gorton	44,555	1,134	39	1,256	27·75	591	13·06	14·69	16·23	1
	Levenshulme	21,754	606	36	479	21·68	223	10·09	11·59	10·71	

TABLE H, 1913.

BIRTHS REGISTERED IN THE CITY OF MANCHESTER, IN ITS MAIN DIVISIONS AND IN DISTRICTS; DISTINGUISHING LEGITIMATE AND ILLEGITIMATE BIRTHS; ALSO THE PROPORTION OF MORTALITY AMONG INFANTS OF BOTH CLASSES UNDER ONE YEAR OF AGE.

STATISTICAL DIVISIONS		BIRTHS		Percentage of Illegitimate Births to Total Births	DEATHS UNDER 1 YEAR		PROPORTION OF DEATHS UNDER 1 YEAR PER 1,000 BIRTHS			Deaths under 1 Year per 1000 Births in the 10 years, 1903 to 1912
		Total	Illegitimate		Total	Of Illegitimate Children	Total	Legitimate	Illegitimate	
City of Manchester ...		**19,052**	**769**	**4·0**	**2,452**	**176**	**129**	**124**	**229**	**153**
I.	Manchester Township	3,518	171	4·9	590	50	168	161	293	188
II.	North Manchester ...	5,401	151	2·8	625	22	116	115	146	137
III.	South Manchester ...	10,133	447	4·4	1,237	104	122	117	232	148
I.	Ancoats	1,326	56	4·2	204	17	154	147	303	189
	Central	528	46	8·7	83	11	157	149	239	198
	St. George's.....	1,664	69	4·2	303	22	182	176	319	183
II.	Cheetham.....	962	30	3·1	87	5	90	88	167	97
	Crumpsall.....	183	5	2·7	19	2	104	96	400	126
	Blackley	340	10	2·9	23	...	68	70	...	116
	Harpurhey	480	8	1·7	54	2	112	110	250	131
	Moston.....	667	23	3·4	65	3	97	96	130	120
	Newton Heath.....	1,163	36	3·1	148	4	127	128	111	151
	Bradford	810	20	2·5	123	4	152	151	200	169
	Beswick	377	5	1·3	54	...	143	145	...	167
	Clayton.....	419	14	3·3	52	2	124	123	143	158
III.	Ardwick	1,157	50	4·3	181	16	156	150	320	159
	Openshaw	913	27	3·0	131	5	143	142	185	162
	Gorton (West)	807	30	3·7	104	9	129	122	300	164
	Rusholme and Kirk.	816	19	2·3	78	5	96	92	263	98
	Chorlton-on-Med. ...	1,219	123	10·1	158	23	130	123	187	165
	Hulme	1,896	94	5·0	273	22	144	139	234	168
	Moss Side	529	37	7·0	42	5	79	75	135	99
	Withington.....	1,061	31	2·9	84	8	79	74	258	90
	Gorton	1,256	28	2·2	151	10	120	115	357	157
	Levenshulme	479	8	1·7	35	1	73	72	125	89

TABLE J, 1913.

Infantile Mortality in the City, and its Three Main Divisions.

Death-rates under One Year per 1,000 Births.

Causes of Death	City of Manchester	Manchester Township	North Manchester	South Manchester
All Causes	128·70	167·71	115·72	122·08
Measles	3·67	4·83	2·96	3·65
Whooping Cough	3·25	3·70	3·52	2·96
Other Com: Infectious Diseases†	0·52	...	1·11	0·39
Diarrhœal Diseases	22·67	38·37	19·44	18·95
Tubercular Diseases‡	4·67	3·70	2·78	6·02
Convulsions	3·10	2·84	3·89	2·76
Other Nervous Diseases§	1·94	2·84	1·67	1·78
Lung Diseases	23·83	33·83	20·92	21·91
Premature Birth.....	20·42	20·75	18·33	21·42
Atrophy, &c. ‖	16·95	22·46	18·89	14·01
Suffocation	0·68	1·14	0·37	0·69
Found dead in bed (overlaid) ...	4·46	7·39	2·41	4·54

† These are Smallpox, Scarlatina, Diphtheria, Membranous Croup, and various forms of "Feve including the chief forms of Typhus and Typhoid.

‡ These are Phthisis, Tubercular Meningitis (Hydrocephalus), Tabes Mesenterica, and Gene Tuberculosis (Scrofula).

§ These are Meningitis, and other diseases of the Brain and Spinal Cord.

‖ These are such ill-defined causes as Atrophy, Marasmus, Debility, Inanition. &c.

TABLE K, 1913.—CITY OF MANCHESTER. ANNUAL RATES OF MORTALITY PER 1,000 PERSONS LIVING AT ALL AGES, IN THE CITY OF MANCHESTER AND IN ITS STATISTICAL DIVISIONS, FROM CERTAIN DISEASES AND GROUPS OF DISEASES.

CAUSES OF DEATH	City of Manchester	Manchester Township	North Manchester	South Manchester	City of Manchester Average of 10 years 1903-1912
All Causes	15·77	23·89	13·63	14·62	18·00
Smallpox	...	...	...	...	...
Measles	0·35	0·61	0·27	0·32	0·59
Scarlet Fever	0·13	0·16	0·19	0·09	0·15
Typhus Fever	...	...	...	...	...
Influenza	0·16	0·09	0·12	0·20	0·15
Whooping Cough	0·19	0·19	0·19	0·18	0·39
Diphtheria and Memb : Croup.	0·14	0·15	0·18	0·12	0·18
Ill-defined Fever	0·00	...	...	0·00	0·00
Enteric Fever	0·06	0·05	0·06	0·07	0·11
Diarrhœal Diseases	0·84	1·77	0·75	0·63	0·97
Puerperal Fever	0·03	0·04	0·04	0·02	0·03
Erysipelas	0·03	0·06	0·01	0·03	0·04
Pyæmia, Septicæmia	0·01	0·02	0·00	0·01	0·04
Phthisis (Tuberc : Pulmon :)	1·42	2·79	0·99	1·26	1·74
Tubercular Meningitis	0·20	0·37	0·16	0·18	0·26
Tuberc : Periton : Tabes Mes :	0·12	0·12	0·07	0·15	0·14
Tuberculous Dis : (other)	0·19	0·28	0·14	0·19	0·22
Alcoholism	0·06	0·10	0·04	0·05	0·09
Cancer	0·98	1·17	0·82	1·00	0·89
Rheumatic Fever	0·06	0·07	0·07	0·06	0·06
Premature Birth	0·52	0·64	0·47	0·52	0·63
Nervous Diseases	0·77	1·04	0·65	0·76	1·01
Heart and Blood Vessels Diseases	2·28	2·77	2·13	2·23	2·51
Bronchitis	1·52	2·74	1·29	1·30	1·81
Pneumonia	1·59	2·88	1·34	1·35	1·94
Respiratory Diseases (other)	0·16	0·24	0·12	0·16	0·21
Digestive Organs (Diseases of)	0·75	0·94	0·65	0·75	0·83
Urinary Organs (Diseases of)	0·50	0·66	0·41	0·51	0·52
Old Age	0·59	0·65	0·55	0·59	0·47

TABLE L, 1913.

MANCHESTER.—Certification of the Causes of Death in the Main Divisions and in Districts.

STATISTICAL DIVISIONS.		Total Deaths	Certified by		Not Certified	Proportion per cent. Deaths Certified by		
			Registered Medical Practitioners	Coroner		Regist'd Medical Practitioners	Coroner	N Cer
City of Manchester		**11,718**	**10,729**	**955**	**34**	**91·6**	**8·1**	**0**
I. Manchester Township ...		2,732	2,467	256	9	90·3	9·4	0
II. North Manchester		2,843	2,625	208	10	92·3	7·3	0
III. South Manchester		6,143	5,637	491	15	91·8	8·0	0
I.	Ancoats	930	841	89	...	90·5	9·6	.
	Central	525	458	66	1	87·2	12·6	0
	St. George's	1,277	1,168	101	8	91·5	7·9	0
II.	Cheetham	493	451	39	3	91·5	7·9	0
	Crumpsall	119	113	6	...	95·0	5·0	.
	Blackley	159	151	8	...	95·0	5·0	.
	Harpurhey	267	249	15	3	93·2	5·6	1
	Moston	273	253	17	3	92·7	6·2	1
	Newton Heath	674	617	56	1	91·5	8·3	0
	Bradford	459	420	39	...	91·5	8·5	.
	Beswick	209	196	13	...	93·8	6·2	.
	Clayton	190	175	15	...	92·1	7·9	.
III.	Ardwick	720	660	56	4	91·7	7·8	0
	Openshaw	525	481	43	1	91·6	8·2	0
	Gorton (West)	429	392	36	1	91·4	8·4	0
	Rusholme and Kirk. ...	480	448	32	...	93·3	6·7	.
	Chorlton-upon-Medlock	999	923	75	1	92·4	7·5	0
	Hulme	1,227	1,112	111	4	90·6	9·1	0
	Moss Side	400	365	33	2	91·2	8·3	0
	Withington	549	508	41	...	92·5	7·5	.
	Gorton	591	541	49	1	91·5	8·3	0
	Levenshulme	223	207	15	1	92·8	6·7	0

TABLE M, 1913.—City of Manchester.—Annual Rates of Mortality at six groups of ages, * per 1,000 living at those age groups, from certain prevalent diseases, and groups of diseases; also the Average Rates of Mortality for the years 1901-1910.

Causes of Death	Under 5 Years		5 to 14 Years		15 to 24 Years		25 to 44 Years		45 to 64 Years		65 Years and upwards	
	Average 1901-1910	1913	Average 1901-1910	1913	Average 1901-1910	1913	Average 1901-1910	1913	Average 1901-1910	1913	Average 1901-1910	1913
All Causes	62·77	47·22	3·65	3·14	3·74	3·39	8 93	6·81	30·18	24·87	103·94	88·94
Smallpox	0·01	...	0·00	...	0·00	...	0·01	...	0·01	...	0·01	...
Measles	4·43	3·03	0·13	0·10	0·01	...	...	...	0·00	...	...	...
Scarlatina	0·98	0·71	0·27	0·22	0·02	0·03	0·02	0·00	0·00	...	...	...
Diphtheria, Memb Croup	1 16	0·89	0·28	0·20	0·01	0·02	0·01	0·00	0·00	...	...	0·04
Whooping Cough	3·25	1·69	0·08	0·02	...	...	...	...	...	...	...	...
Fever — Typhus	...	...	0·00	...	0·00	...	0·00	...	0·00	...	...	...
Fever — Enteric	0·04	0·01	0·06	0·01	0·15	0·08	0·17	0·10	0·10	0·07	0·03	0·04
Fever — Continued	0·00	0·01	0·00	...	0·00	...	0 00	...	0·00	...	0·01	...
Diarrhœal Diseases	7·93	7·52	0·02	0·01	0·01	...	0·01	0·00	0·09	0·05	0·73	0·29
Tubercular Diseases	4·00	2·91	0·91	0·84	1·43	1·41	2·87	2·11	3·88	2·94	2·08	1·71
Malignant Diseases	0·02	0·01	0·01	0·01	0·04	0·04	0·46	0·44	3·36	3·36	7·50	8·07
Diseases of... Nervous System	3·84	2·04	0·26	0·20	0·18	0·18	0·55	0·42	1·56	1·18	4·61	4·28
Diseases of... Heart and Blood Vessels	0·32	0·11	0·26	0·19	0·43	0·34	1·17	0·88	7·52	6·38	32·46	23·82
Diseases of... Respiratory System	13·56	10·65	0·47	0·38	0·51	0·29	1·47	0·93	6·93	5·10	27·08	23·60
Diseases of... Digestive System	3·38	2·06	0·19	0·22	0·22	0·19	0·42	0·37	1·48	1·41	2·93	2·89
Diseases of... Urinary System	0·22	0·17	0·07	0·08	0·11	0·10	0·37	0·29	1·58	1·45	3·88	3·57
Other Diseases	19·64	15·41	0·65	0·65	0·64	0·72	1·49	1·26	4·32	2·94	24·13	20·64

TABLE N, 1913—ANNUAL RATES OF MORTALITY IN STATISTICAL DIVISIONS
SIX GROUPS OF AGES, *PER 1,000 LIVING AT THOSE AGE GROUPS, FROM CERT
PREVALENT DISEASES, AND GROUPS OF DISEASES.

CAUSES OF DEATH	Under 5 Years			5 to 14 Years			15 to 24 Years		
	Manchester Township	North Manchester	South Manchester	Manchester Township	North Manchester	South Manchester	Manchester Township	North Manchester	South
All Causes	72·90	41·32	42·68	4·57	3·28	2·63	3·75	3·02	3
Smallpox	...	...	...	...	...	...	...	...	.
Measles	5·01	2·29	2·85	0·17	0·05	0·12	...	...	.
Scarlatina	0·91	1·10	0·43	0·22	0·33	0·17	0·05	...	c
Diphtheria, Memb. Croup	1·14	0·89	0·82	0·09	0·30	0·17	...	0·05	c
Whooping Cough	1·67	1·70	1·69	...	...	0·04	...	...	.
Fever—Typhus	...	...	...	...	...	...	...	...	.
Fever—Enteric	...	...	0·02	...	0·02	0·01	0·05	0·03	c
Fever—Continued	...	...	0·02	...	...	...	...	...	.
Diarrhœal Diseases	15·11	6·44	5·82	...	0·02	...	...	...	.
Tubercular Diseases	3·65	1·65	3·36	1·64	0·70	0·67	2·07	1·13	1
Malignant Disease	...	0·04	...	...	...	0·01	...	0·08	c
Diseases of—Nervous System	2·66	1·91	1·92	0·13	0·26	0·19	0·10	0·15	c
Diseases of—Heart and Blood Vess.	0·15	0·08	0·11	0·09	0·35	0·13	0·34	0·49	c
Diseases of—Respiratory System	17·92	9·28	9·20	0·69	0·45	0·26	0·30	0·36	c
Diseases of—Digestive System	2·05	1·99	2·10	0·35	0·19	0·21	0·15	0·15	c
Diseases of—Urinary System	0·23	0·21	0·14	0·09	0·09	0·08	0·05	0·05	c
Other Diseases	22·40	13·73	14·22	1·12	0·52	0·58	0·64	0·54	c

CAUSES OF DEATH	25 to 44 Years			45 to 64 Years			65 Years and upwa		
	Manchester Township	North Manchester	South Manchester	Manchester Township	North Manchester	South Manchester	Manchester Township	North Manchester	South
All Causes	11·18	5·65	6·29	37·97	22·01	22·49	106·05	87·90	84
Smallpox	...	...	...	...	...	...	...	...	.
Measles	...	...	...	...	...	...	...	...	.
Scarlatina	...	...	0·01	...	...	...	...	...	.
Diphtheria, Memb. Croup	...	0·01	...	...	...	...	...	...	0
Whooping Cough	...	...	...	...	...	...	...	...	.
Fever—Typhus	...	...	...	...	...	...	...	...	.
Fever—Enteric	0·12	0·10	0·10	0·05	0·10	0·06	...	...	c
Fever—Continued	...	...	...	...	...	...	...	...	.
Diarrhœal Diseases	...	...	0·01	0·11	0·03	0·04	0·21	0·31	0
Tubercular Diseases	3·84	1·54	1·95	6·58	2·00	2·34	5·13	1·07	1
Malignant Disease	0·49	0·40	0·44	4·28	2·94	3·29	7·91	8·12	8
Diseases of—Nervous System	0·70	0·46	0·33	1·34	0·90	1·26	6·41	2·45	4
Diseases of—Heart and Blood Vess.	1·02	0·93	0·82	8·72	6·41	5·70	23·09	23·58	24
Diseases of—Respiratory System	2·01	0·73	0·75	9·36	3·91	4·45	35·71	23·89	20
Diseases of—Digestive System	0·73	0·18	0·38	1·71	1·34	1·36	2·57	3·37	2
Diseases of—Urinary System	0·38	0·21	0·30	1·71	1·60	1·30	5·13	2·00	3
Other Diseases	1·89	1·06	1·21	4·12	2·77	2·68	19·88	23·13	19

* For death-rates at all ages, see Table K.

TABLE O, 1913.—PARTICULARS AS TO MANCHESTER PATIENTS UNDER TREATMENT IN MONSALL AND CLAYTON HOSPITALS DURING THE YEAR; ALSO OF PATIENTS FROM OUTSIDE DISTRICTS SENT TO MONSALL AND CLAYTON DURING THE SAME PERIOD.

HOSPITAL	DISEASE	In Hospital commencement of year	Admitted	Discharged	Died	Remaining in Hospital close of year
Clayton	SMALLPOX	...	1	1	...	...
Monsall	SCARLET FEVER.....	255	2,184	2,059	62	318
	DIPHTHERIA	54	392	305	64	77
	ENTERIC FEVER ...	32	219	180	34	37
	TYPHUS FEVER	...	...	...	...	...
	OTHER ACUTE DISEASES	20	252	212	40	20
	TOTAL	361	3,048	2,757	200	452

PATIENTS SENT TO MONSALL OR CLAYTON, FROM DISTRICTS OUTSIDE THE CITY DURING THE YEAR 1913.

DISEASE	Barnes' Convales. Hospital	St. Mary's Hospital	Royal Infirmary	Pendlebury Hospital	Bucklow Joint Hosp. Board	Cheadle	Other Outside Districts
Smallpox	...	...	...	...	...	...	...
Scarlatina	1	...	2	4	63	9	1
Diphtheria	...	1	...	7	24	2	2
Enteric Fever	...	...	7	...	5	2	...
Other Diseases	...	1	2	...	4	...	...

Total, 137.

TABLE P, 1913.—Work of Sanitary Department for the Year.

	TOWNSHIPS																						TOTALS
	Ancoats	Central	St. George's	Cheetham	Crumpsall	Blackley	Harpurhey	Moston	Newton	Bradford	Beswick	Clayton	Ardwick	Openshaw	Gorton (West)	Rusholme and Kirkmanshulme	Chorlton-upon-Medlock	Hulme	Moss Side	Withington	Levenshulme	Gorton	
Complaints to Sanitary Superintendent ...	260	68	168	362	7	48	58	2	158	183	21	176	78	358	49	350	532	552	203	...	101	189	3,923
Inspections of: Dwelling-houses	6693	3026	5796	6150	2023	1066	2331	2113	5406	3232	1977	2385	3738	3261	2192	4824	6145	6837	3270	...	1770	3690	77,925
Newly-infected Dwelling-houses	193	114	360	722	77	93	162	146	313	150	69	141	197	221	236	190	227	217	141	...	137	259	4,365
Cellars	2	8	1	...	...	...	...	2	...	...	...	...	...	...	...	3	12	...	...	...	...	...	28
Schools	1	3	3	...	1	1	5	2	...	...	...	...	...	...	...	7	3	18	2	...	3	4	53
Factories and Workshops	15	239	14	...	...	8	6	...	29	...	...	4	17	13	...	3	31	65	5	...	1	9	459
Lodging-houses	1080	2352	1608	1481	3	...	4	8	41	64	17	1	189	28	36	109	2107	1734	40	...	...	19	10,921
Offensive Trades	43	63	8	...	4	37	2	...	27	...	1	38	17	31	...	...	16	16	...	...	...	11	314
Dairies and Milkshops	157	329	151	158	21	126	105	101	143	75	27	10	183	85	227	130	193	234	67	...	45	88	2,655
Ice Cream Manufactories	709	35	86	6	1	6	7	...	9	24	...	...	37	15	19	1	23	19	2	...	...	5	1,004
Bakehouses	99	111	89	191	27	87	16	78	37	33	...	33	90	98	27	126	124	167	180	...	108	94	1,815
Canal Boats	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2,227
Slaughter-houses	1	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	2	...	6
Tips for Refuse	1	1	1	11	3	3	...	13	3	...	...	3	...	15	...	3	...	...	...	...	...	...	57
Miscellaneous Inspections	846	1232	1241	573	379	215	278	173	410	387	144	250	639	630	451	861	2109	2024	277	...	410	739	14,268
Factories and Workshops by Shop Hours, &c., Inspectors	659	4655	934	1685	16	155	20	39	146	99	1	38	467	190	187	213	1198	552	311	...	103	109	11,777
Shops by Shop Hours, &c., Inspectors	477	1697	388	1292	97	318	77	31	247	120	...	41	339	447	124	321	527	478	388	...	198	164	7,771
Infected Rooms Disinfected	1024	456	1022	1128	132	132	174	586	904	545	616	310	654	644	685	666	661	1123	575	...	326	938	13,301
Infected Dwellings Re-inspected	362	275	612	1213	139	307	581	387	633	253	124	103	573	474	572	401	511	600	259	...	347	798	9,524
Drains Tested by Water	469	260	143	138	15	52	47	36	129	84	52	33	191	37	80	109	527	480	157	...	12	259	3,310
Smoke Abatement: Observations made	30	32	15	21	114	3	2	179	28	75	1	17	12	27	9	29	36	25	...	23	11	9	698
Smoke Abatement: Proceedings before Magistrates	11	4	4	2	9	...	1	1	6	4	...	5	5	6	5	2	6	2	...	1	...	2	76
Food Adulteration: Samples Collected for Analysis	129	429	122	145	38	36	54	41	61	60	40	42	115	109	116	164	408	427	98	185	84	116	*3,029
Food Adulteration: Proceedings before Magistrates	4	20	1	5	...	...	1	1	1	...	...	...	5	1	9	2	14	9	3	4	1	1	82
Ashpits reported to Cleansing Department for emptying	...	2	1	...	...	...	...	...	...	1	...	...	...	...	...	1	6	2	6	...	...	2	21
Receptacles reported to Cleansing Department for emptying	6	3	4	4	...	...	1	1	3	1	...	...	...	...	2	4	7	7	7	...	...	1	51
Notices issued for Abatement of Nuisances.	1060	532	1637	1534	182	231	637	569	850	656	166	215	517	543	470	1494	1076	1678	320	...	431	656	15,454
Letters written for Abatement of Nuisances	77	29	128	108	8	1	5	9	33	61	2	22	15	7	8	15	63	144	9	...	...	52	796
Reports made to Medical Officer of Health	...	2	...	10	...	5	5	...	2	...	...	...	...	...	1	...	...	4	1	...	...	3	33
Legal proceedings taken	40	104	18	38	...	1	4	4	4	1	...	7	7	7	...	4	45	78	2	...	6	...	†375
Total Nuisances abated	1093	486	1656	1500	161	156	529	563	768	593	192	214	499	454	478	1494	1093	1554	307	...	417	639	14.846

* 10 Samples procured Outside the City and Infringement of Canal Boats Act.

The Midwives Supervising Committee present, for the information of the City Council, the following report of the operations carried on in Manchester during 1913 under the Midwives Act, 1902:—

STATEMENT BY THE EXECUTIVE OFFICER, MARGUERITE A. C. DOUGLAS, L.R.C.P. and S.E.

Statistics Relating to Midwives.

The number of midwives who gave notice of their intention to practise in Manchester during 1913 was 178; of these, 30 reside without the City.

The following table (A) gives particulars relating to midwives practising in Manchester, and sets forth their qualifications prior to entry on the Midwives' Roll. It will be seen that more than 80 per cent. are certificated midwives.

It also contains under the separate headings the number of labours attended by midwives, the cases of Puerperal Fever, with other details in relation to these, and the number of withdrawals and suspensions, with the reasons therefor.

TABLE A.—PARTICULARS RELATING TO MIDWIVES PRACTISING IN MANCHESTER IN 1913.

Qualification of Midwife.		Bona-fides.	St. Mary's Hospital.	Maternity Hospital.	London Obstetric Society.	Queen Charlotte Hospital.	Liverpool Lying-in Hospital.	Central Midwives Board.	Total.
No. notifying their intention to practise in Manchester in 1913	Resident in Manchester...	26	18	11	25	1	3	64	148
	Resident outside Manchester...	9	4	1	4	...	...	12	30
No. removing from Manchester area.....		...	...	...	1	...	1	15	17
No. given up practice		2	3	...	2	...	...	3	10
No. who have died.....		...	...	...	1	...	...	...	1
No. removed from Roll.....		2	2	1	1	...	...	...	6
No. of births attended by midwives under the heading given		2523	1822	1337	2230	24	336	3979	12251
No. of cases of puerperal fever attended by midwives under the heading given		13	13	8	10	...	1	24	69
Deaths amongst cases of puerperal fever attended by midwives		2	3	1	2	...	...	2	10
Per cent. of puerperal fever amongst all cases attended		0·52	0·71	0·60	0·45	...	0·30	0·60	0·56
Per cent. of puerperal fever amongst cases attended by midwives having puerperal fever in their practice		1·80	1·01	0·83	0·66	...	0·70	1·34	1·07
† No. of suspensions or withdrawal from practice on account of	Puerperal fever.....	16	16	6	16	...	1	20	75
	Other infectious disease ...	4	1	2	...	...	2	3	12
	High temperature	1	...	1	1	...	...	3	6
	Dirty bag and appliances...	...	1	1	...	...	...	...	2
	Septic Arm	1	...	...	...	...	...	...	1
	Preparing body for burial .	1	...	...	...	...	...	...	1

† Eighteen midwives were each suspended twice, two three times, and three four times. See page 250.

Details of the Work of the Executive Officer.

Inspection Visits to Midwives.

507 inspection visits were paid to midwives. In 308 instances the midwives were at home; in 59 cases the visits were paid in connection with Puerperal Fever; in one for Erysipelas; in another for Typhoid; six for Scarlet Fever; and seven cases for infectious and septic conditions. In each instance the midwife was duly disinfected.

During the year midwives were interviewed on 149 occasions at the Public Health Office. In some instances these interviews were at the request of the Executive Officer, for the purpose of going over the rules, or for practising pulse and temperature taking.

The routine method of inspection followed has been in use since 1905. It comprises :—

1.—Examination of the sanitary condition of the houses :

In nine instances defects were reported to the Sanitary Department, and were dealt with by that Authority. In three of these instances the report was in connection with registration for lodgers.

In nine instances the houses were very badly kept, and dirty. In all the nine cases the matter was rectified by the midwife.

2.—Inspection of the bag of appliances :

In 24 instances the bags were unsatisfactory and incomplete, while in one Fuller's Earth was carried for umbilical dressing; one, loose sweets were found; and three contained rusty scissors. In 14 of these the bags and contents were, in addition, soiled.

One midwife habitually carried Antipyrin.

The confinement bags as a whole are properly equipped, but the practice of carrying insufficient appliances to the daily visits is unfortunately continued in many instances.

3.—Examination of registers, medical aid record books, notification books, and temperature record books :

Registers.

The registers are for the most part well entered. In nine cases they were not up-to-date, and some of these were not fully entered.

Records of Calling in Medical Aid.

Table F gives the reasons for which medical aid was called. In a few instances there had been some delay. In each case the attention of the midwife was drawn to the requirements of the rules.

Temperature Record Books.

The temperature and pulse records as a whole have been well kept. In only 11 instances were the records found unsatisfactory.

4.—Inspection of washing dresses and aprons :

The midwives for the most part have a sufficient number of dresses and aprons, but in eight instances the washing dresses and aprons were insufficient to insure cleanliness.

Two midwives wore unsuitable dresses while conducting confinements.

Investigation of Mode of Practice of Midwives.

The mode of practice of 51 midwives was investigated in the house of the patient during the past year, and 118 lying-in women were thus visited, besides those visited on account of Puerperal Fever or still-births.

Records for rise of temperature, not Puerperal Fever, accounted for 21 visits, and Ophthalmia in the infant for 16. A rash or spots on the infant were the cause of 44 visits, and an unsatisfactory condition of the umbilicus necessitated 15 visits.

Puerperal Fever.

During the year 1913, 124 cases of Puerperal Fever were notified. Of these, no less than 24 occurred after abortion or premature labour.

Of the abortions, 10 were at the second or third months of gestation, 5 at the fourth month, 4 at the sixth month, 3 at the seventh month, and 2 during the eighth month of pregnancy.

The total fatal cases numbered 21, of which 3 were premature labours; in several of these the doctor had not been called in until some days after the onset of illness.

The date of onset of fever was in 45 cases within the first four days after delivery; in 52 the attack began from the fourth to the eighth day; in 11 from the eighth to the tenth day; and in 16 instances on or after the tenth day of the puerperium.

Of the 21 deaths, 3 took place in the first week after confinement; 9 during the second week; 8 during the third and fourth weeks; and in 1 instance the fatal termination supervened during the second month from delivery.

The cases were notified in 44 instances within three days of the onset of symptoms; in 53 cases from the fourth to the seventh days of illness; while 27 notifications were received as late as during the second and third weeks of the disease.

In 51 cases midwives alone were present at the confinements. They called in doctors within 24 hours from the onset of fever in 34 cases; within 2 days in 8 instances; on the third day on 7 occasions; while in 2 instances the doctor was called in by relatives after the midwife had ceased attending.

TABLE B.—GIVING IN DISTRICTS FOR 1913 THE POPULATION OF MANCHESTER; BIRTHS AND BIRTH-RATES; CASES, ETC., OF PUERPERAL FEVER; AND THE NUMBER OF MIDWIVES RESIDENT IN EACH DISTRICT.

Statistical Divisions		Population	Births Registered		Cases of Puerperal Fever				Case Fatality per cent. 1905-1912	1913 Midwives resident in Manchester
			Number	Rate	Total Attacks	Deaths	Attack rate per 1,000 births	Case Fatality per cent.		
City of Manchester		**731,556**	**19,052**	**25·64**	**124**	**21**	**6·51**	**16·9**	**22·6**	**148**
I.	Manchester Township	112,599	3,518	30·76	26	6	7·39	23·1	21·2	23
II.	North Manchester	205,321	5,401	25·90	29	7	5·37	24·1	27·7	40
III.	South Manchester	413,636	10,133	24·12	69	8	6·81	11·6	20·4	85
I.	Ancoats	40,259	1,326	32·43	10	4	7·54	40·0	31·1	4
	Central	21,409	528	24·28	7	..	13·26	..	11·1	15
	St. George's	50,931	1,664	32·16	9	2	5·41	22·2	18·4	4
II.	Cheetham	43,640	962	21·70	6	..	6·24	..	28·2	7
	Crumpsall	10,463	183	17·22	1	1	5·46	100·0	37·5	..
	Blackley	14,421	340	23·21	4	..	11·76	..	41·2	3
	Harpurhey	17,379	480	27·19	..	..	..	..	28·6	2
	Moston	25,487	667	25·76	2	..	3·00	..	44·5	6
	Newton	42,447	1,163	26·97	9	3	7·75	33·3	25·6	11
	Bradford	25,460	810	31·32	3	2	3·71	66·7	16·3	3
	Beswick	12,130	377	30·60	3	..	7·96	..	20·8	4
	Clayton	13,894	419	29·69	1	1	2·38	100·0	37·5	4
III.	Ardwick	39,745	1,157	28·66	9	..	7·78	..	23·1	8
	Openshaw	31,674	913	28·38	9	3	9·87	33·3	24·6	5
	West Gorton	26,958	807	29·47	3	1	3·72	33·3	15·8	4
	Rusholme and Kirkmanshulme	42,393	816	18·95	3	1	3·68	33·3	30·0	9
	Chorlton-upon-Medlock	54,504	1,219	22·02	9	1	7·39	11·1	15·6	20
	Hulme	63,065	1,896	29·60	10	..	5·27	..	20·8	11
	Moss Side	35,119	529	14·83	4	1	7·56	25·0	30·0	9
	Withington	53,869	1,061	19·39	6	1	5·66	16·7	17·4	8
	Gorton	44,555	1,256	27·75	15	..	11·94	..	12·1	7
	Levenshulme	21,754	479	21·68	1	..	2·09	..	11·1	4

Section of Table B giving the number of Midwives resident outside but practising in Manchester.

Salford	10
Failsworth	4
Stretford	8
Reddish	3
Heaton Chapel	2
Rhodes	1
Droylsden	1
Ashton-on-Mersey	1
Total	30

TABLE C.—RELATING TO THE CASES OF PUERPERAL FEVER ATTENDED EITHER BY MIDWIVES OR DOCTORS DURING THE YEARS 1905 TO 1913.

Year	Number of cases attended by							
	MIDWIVES		DOCTORS		MIDWIFE AND DOCTOR		TOTAL	
	Attacks	Deaths	Attacks	Deaths	Attacks	Deaths	Attacks	Deaths
1905	41	11	31	11	10	3	82	25
1906	32	6	54	20	17	4	103	30
1907	35	4	39	9	21	7	95	20
1908	37	7	50	13	14	4	101	24
1909	33	7	34	5	15	5	*84	17
1910	41	6	67	22	23	3	131	31
†1911	44	4	63	19	28	3	135	26
†1912	50	7	38	9	35	5	123	21
†1913	51	5	55	11	18	5	124	21

* Includes two cases unattended.

† These include cases occurring in the recently added districts of Gorton and Levenshulme.

TABLE D.—SHOWS WHERE PATIENTS SUFFERING FROM PUERPERAL FEVER WERE TREATED, AND THE RESULTS OBTAINED, IN 1913

Cases treated at	Total No. of Cases	No. Recovering	No. of Deaths	Case Mortality per cent.
Home	36	31	5	13·89
Monsall Hospital	82	66	16	19·52
Other Institutions	6	6	0	....
Total	124	103	21	16·94

TABLE E.—SHOWING FOR CASES OF PUERPERAL FEVER THE CHARACTER OF THE LABOUR AND THE RESULTS FOR 1913; ALSO THE CLASSIFICATION OF ABNORMAL CASES, AND CASES IN WHICH PERINEAL TEAR WAS STATED TO BE PRESENT.

	No. of Cases	Recovery	Death
Normal full term labour	63	53	10
Abnormal full term labour.....	37	29	8
Abortion or Premature.....	24	21	3
Abnormal Labour.			
Forceps	28	19	9
Adherent placenta, manual removal	3	3	–
Placenta prævia	2	2	–
Ante and post partum hæmorrhage	7	6	1
Version	3	3	–
Perineal tear stated to be present.			
Labour normal	6	5	1
Abnormal	8	6	2

In each case where the patient recovered, a visit was paid after the fourth and eighth months after the attack, in order to obtain her further health history.

The following tables give the results of these investigations :—

Total cases treated at		Total recovery	Per cent.	Recovery with good health	Per cent.	With poor health	Per cent.
Home.....	36	31	86·11	25	69·44	6	16·67
Monsall Hospital	82	66	80·49	56	68·29	10	12·20

The remaining six cases were in other Institutions.

The total result of treatment of Puerperal Fever at Monsall Hospital is more satisfactory than in the previous year, but the result of home-treated cases is less satisfactory. Once again the benefit of hospital treatment is apparent from the above table. It is certain that the hospital death-rate would be lowered if cases were removed from their homes earlier, as in many instances the prognosis on admission was most unfavourable. In illustration of this fact it may be mentioned that four patients died within 24 hours of admission, one within 48 hours, whilst four others died within three days of admission.

The courtesy and readiness to admit patients requires acknowledgment, especially as in most instances the infants have also been admitted, even although the accommodation was fully taxed.

In one instance of severe Puerperal Fever nursed at Monsall Hospital the patient is again pregnant.

Suspension or Withdrawal from Practice of Midwives.

It will be seen from Table A that there were 97 suspensions during the year. In 75 instances these were in connection with Puerperal Fever cases, and in practically every instance the midwife was off work only for a few hours, whilst personal disinfection was carried out.

In 22 instances midwives had to be suspended owing to other conditions, in order to prevent possible infection of their patients.

Records of calling-in Medical Aid under Rule E 19 of the Central Midwives' Board, and Payment of Fees in connection therewith.

During the year 1913, the number of medical records received was 2,596, as compared with 2,772 in the previous year. 2,084 of the records were for cases occurring in the private practice of midwives, whilst 512 were in connection with the various lying-in charities. The corresponding figures for 1912 were 1,744 and 1,028 respectively.

In each instance where a record of rise of temperature, rigor, offensive lochia, abdominal pain, mastitis, or other suspicious symptom, was received, immediate investigations were made.

The records are classified in the following table, under the various causes for which medical aid was sought. (See Table F on page 253.)

As regards the payment of fees to medical practitioners, under the scheme outlined in the report for 1905, and revised, as shown in the report for 1909, 519 applications were received during the year. These were considered by the Medical Sub-Committee, and they recommended that payment should be made in 439 cases, amounting to £240 6s. 6d., the amount in 1912 being £535 12s. Of the 80 cases which were rejected as not fulfilling the conditions, in 57 instances the income was above the scale, whilst six did not fulfil in various respects the conditions under which the fee is paid; in 11 cases the people paid the fee themselves, and in six instances they could not be traced owing to late application for fee being made.

The decrease in the amount expended during the year was due to the fact that from April 1st a large number of the payments were modified in respect of deposit contributors under the National Insurance Act. However, in consequence of the alterations made by Section 14 (4) of the National Insurance Act, 1913, from September 1st the Midwives Supervising Committee decided to revert to the former arrangements. The revised statement of payment of fees now in operation is given herewith.

Public Health Office,
Town Hall, Manchester,
23rd October, 1913.

Midwives Act, 1902.

Revised Statement of Payment of Fees to Medical Practitioners.

In consequence of the alterations made by Section 14 (4) of the National Insurance Act, 1913, the Midwives Supervising Committee of this City have decided to revert to their former arrangements for the payment of fees to Medical Practitioners, which are as follows:—

Subject to the conditions set forth in the letter of May, 1906, contained in the book of application forms being complied with, the following fees will be paid:—

In the case of a woman in labour a fee of £1 1s. will be paid for emergencies numbered 1 to 9, and in addition for secondary post-partum hæmorrhage.

(1) A malposition.
(2) Presentation other than the uncomplicated vertex.
(3) Cases of breech presentation in primiparæ.
(4) Whenever there appears to be insufficient room for the child to pass, or when a tumour is felt in any part of the maternal passages
(5) Where no presentation can be made out.
(6) Where there is excessive bleeding.

(7) Where two hours after the birth of the child the placenta and membranes have not been completely expelled.
(8) In cases of rupture of the perinæum or of other injuries of the soft parts.
(9) Fits or convulsions.
(10) Secondary post-partum hæmorrhage.

A fee of 5s. will be paid for the following emergencies during the lying-in period. If the case is diagnosed Puerperal Fever a total fee of £1 1s. will be paid :—

(11) Abdominal swelling and tenderness.
(12) Offensive lochia, if persistent.
(13) Rigor, with raised temperature.
(14) Rise of temperature above 100·4° F., with quickening of the pulse for more than 24 hours.

A fee of 5s. will be paid for attendance on cases of :—

(15) Purulent discharge during pregnancy or at the time of labour.

A fee of 2s. 6d. will be paid for medical aid rendered to the newborn child between the hours of 9 a.m. and 9 p.m., and 5s. for such aid between 9 p.m. and 9 a.m., for :—

(16) Injuries received during birth.
(17) Malformation or deformity.
(18) Dangerous feebleness.
(19) Prematurity.
(20) Convulsions.

These payments will only be made in all the foregoing circumstances where the income of the family does not exceed the following rate :—

	s.	d.	
Man and wife	23	0	per week.
Parent or parents and 1 child	25	0	,,
,, ,, 2 children	27	0	,,
,, ,, 3 ,, ...	29	0	,,
,, ,, 4 ,, ...	31	0	,,
,, ,, 5 ,, ...	33	0	,,
,, ,, 6 ,, ...	35	0	,,
,, ,, 7 ,, ...	37	0	,,

Still-births.

The total number of still-births during 1913, of which there is any return was 695, as compared with 732 in the previous year.

BLE F.—NUMBER OF CASES OCCURRING IN 1913 IN WHICH THE MIDWIFE ADVISED THAT A REGISTERED MEDICAL PRACTITIONER SHOULD BE SENT FOR (RULE E 19). ALSO THE NUMBER OF APPLICATIONS FROM MEDICAL PRACTITIONERS FOR PAYMENT OF THEIR FEES FOR ATTENDING CERTAIN EMERGENCY CASES.

Medical aid called in on account of the following causes, as stated by the Midwife		Total	Private Cases	Hospital outdoor cases	Application for † Fees
Abortions, miscarriages		32	20	12	4
Deformed pelvis		8	5	3	..
Loss of blood		8	7	1	4
Other unusual features of pregnancy		29	26	3	1
Presentations	Head—Malpositions	38	33	5	23
	Breech—In primiparæ	13	13	..	3
	Breech—In multiparæ	14	10	4	3
	Breech—Para not stated	41	38	3	6
	Transverse	36	31	5	17
	Funis	26	25	1	9
	Unable to make out	18	14	4	..
Tedious labour	Forceps used	9	8	1	*91
	No record as to forceps	395	336	59	11
Placenta	Retained	59	44	6	15
	Adherent	34	32	2	9
Membranes retained		42	34	8	10
Rupture of perineum		385	333	52	79
Hæmorrhage	Ante partum	68	53	15	25
	Post partum	44	41	3	17
	Hæmorrhage—3rd stage	10	9	1	6
Convulsions		16	16	..	5
Complications		50	38	12	6
Premature labour		12	9	3	6
Abdominal swellings		..	..	..	..
Foul-smelling discharges		1	1	..	..
Secondary post-partum hæmorrhage		..	..	..	..
Rigor		1	1	..	..
Rise of temperature above 100·4° F.		90	68	22	24
Unusual swelling of breasts		12	10	2	4
Progress unsatisfactory or complications		133	94	39	11
Injuries received during birth		..	..	..	..
Obvious malformations		61	45	16	18
Tongue tied		15	13	2	..
Feebleness of Child		229	182	47	49
Inflammation of eyes and eyelids		402	275	127	31
Skin eruption		44	36	8	3
Illness from prematurity		118	98	20	17
Malignant jaundice		27	26	1	5
Inflammation about the umbilicus		15	9	6	3
Unspecified or complications		70	51	19	4
TOTALS		2,596	2,084	512	519

* In addition to the 91 cases of tedious labour in which forceps were used, instrumental aid was also applied in 38 of the other cases of labour.

† These applications have been classified according to the conditions requiring treatment found by the medical practitioner.

This number includes 401 still-births which occurred in the practice of doctors, and 294 which occurred in the practice of midwives. The numbers for 1912 were 438 and 294 respectively.

Through the Cemeteries' return, 585 still-births were notified; 401 of these were doctors' cases, and 184 midwives' cases. 110 still-births attended by midwives were notified by them alone, in addition to the 184 cases returned by the Cemeteries, and also notified by them. The midwives have been requested, when notifying a still-birth, to state, if possible, the place of burial. This was given in 242 instances, leaving 52 unaccounted for. Each still-birth is now investigated, and in all cases the place of burial is ascertained.

294 still-births were reported by midwives where no doctor had been present. In 73 instances the bodies were perfect; in 83 more or less advanced maceration had occurred; while in 138 cases the bodies had been removed before the visit of the investigator. In 59 instances the midwife was not present at the time of birth, and in two cases inquests were held on this account. In 7 cases the children were very premature, and in 50 the bodies were macerated, and no inquest was necessary.

The following are the causes which it seemed reasonable to credit the still-births to :—

Definite history of ill-health of the mother	50
Probable specific disease from family history	5
Drink, to a marked degree, in one or both of the parents	19
Probable drug-taking to procure abortion	16
Accident to the mother before confinement	51
Ante-partum hæmorrhage	11
Breech presentations, full time	16
„ „ premature	3
Monstrosities	3
Funis presentations	1
History of cord round neck—midwife present	2
Eclampsia	1
Abnormally large child	4
Full time twins	5
Premature twins	1
„ births	5
No cause discovered	71
Shock	15
Abnormal presentations	5
Poverty	2
Employment of mother	7
Spina Bifida	1
	294

The large number of cases of full-time children born by breech presentation, where the bodies were perfect, points to the fact that if medical help were obtained when breech presentations were diagnosed a large number of lives might be saved.

The total number of breech presentations with still-born infants is set forth in the next table.

STILL-BORN INFANTS' BREECH PRESENTATIONS.

1.	No.	2.	No.	3.	No.
Primipara	1	Full time	33	Putrid	8
Multipara	48	Premature	16	Perfect	18
				Not seen	23
Total	49	Total	49	Total	49

10 of the children who were still-born were known to be illegitimate.

The still-births have been classified in districts; those occurring in the practice of doctors and midwives are shown in separate columns.

This classification shows the percentage of live and still-born children, and the still-birth rate. The still-birth rate is calculated on the returns from midwives, as these returns are very complete.

It will be seen that the percentage of still-born children is 2·9; in 1912 it was 3·2, and the still-birth rate 0·40 per 1,000 of the population in midwives' practice.

The districts in which the still-birth rate is highest are Openshaw, Bradford, West Gorton, Ancoats, and Ardwick. These are given in order beginning with the district in which the still-birth rate is highest. (See Table G. on next page.)

TABLE G.—TOTAL NUMBER OF BIRTHS REGISTERED IN 1913; ALSO THE NUMBER OF STILL-BIRTHS OCCURRING IN THE PRACTICE OF MEDICAL PRACTITIONERS AND MIDWIVES, AS OBTAINED FROM THE RETURNS OF BURIALS AT VARIOUS CEMETERIES.

Statistical Divisions		Births Registered	Still-births Classified from Cemetery Returns		Proportion Per Cent.			Total Still-births notified by Midwives	Still-birth-rate per 1,000 of the Population in the practice of Midwives	Total Still-birth-rate return from Cemeteries
			Doctors' Cases	Midwives' Cases	Born Living	Still-born				
						Doctors' Cases	Midwives' Cases			
City of Manchester		**19,052**	**401**	**184**	**97·1**	**2·0**	**0·9**	**294**	**0·40**	**0·79**
I. Manchester Township		3,518	55	44	97·2	1·5	1·2	73	0·64	0·87
II. North Manchester		5,401	81	39	97·8	1·5	0·7	66	0·32	0·58
III. South Manchester		10,133	265	101	96·5	2·5	1·0	155	0·37	0·87
I.	Ancoats	1,326	28	15	96·9	2·0	1·1	21	0·51	1·05
	Central	528	4	7	98·0	0·7	1·3	17	0·78	0·51
	St. George's	1,664	23	22	97·4	1·3	1·3	35	0·68	0·87
II.	Cheetham	962	10	1	99·0	1·0	..	5	0·11	0·25
	Crumpsall	183	2	..	98·9	1·1	..	..	..	0·19
	Blackley	340	2	..	99·4	0·6	..	..	..	0·14
	Harpurhey	480	2	1	99·4	0·4	0·2	4	0·23	0·17
	Moston	667	11	3	98·0	1·6	0·4	7	0·27	0·54
	Newton	1,163	20	15	97·0	1·7	1·3	21	0·49	0·81
	Bradford	810	24	13	95·7	2·8	1·5	17	0·66	1·43
	Beswick	377	6	1	98·1	1·6	0·3	4	0·32	0·57
	Clayton	419	4	5	97·9	0·9	1·2	8	0·57	0·64
III.	Ardwick	1,157	25	16	96·6	2·1	1·3	21	0·52	1·02
	Openshaw	913	37	18	94·3	3·8	1·9	19	0·59	1·71
	West Gorton	807	15	14	96·5	1·8	1·7	18	0·66	1·06
	Rusholme and Kirkmanshulme	816	30	6	95·8	3·5	0·7	13	0·30	0·84
	Chorlton-upon-Medlock	1,219	32	7	96·9	2·5	0·6	15	0·27	0·70
	Hulme	1,896	35	12	97·6	1·8	0·6	31	0·48	0·73
	Moss Side	529	15	6	96·2	2·7	1·1	8	0·22	0·59
	Withington	1,061	35	9	96·0	3·2	0·8	5	0·09	0·80
	Gorton	1,256	30	13	96·7	2·3	1·0	17	0·38	0·95

Death of the Mother.

No cases of death of mother, before a medical practitioner could be obtained, were notified during the year.

Deaths of New-born Children.

Notifications of 44 deaths of new-born children have been received and investigated.

Enquiries were made by the City Coroner into the causes of these deaths. In 39 instances inquests were held, and 5 were returned as uncertified.

Where the midwife is summoned to appear before the City Coroner in connection with any of these deaths, it is customary for an official from the Public Health Office to attend the Court and take a note of the proceedings.

The causes of death were given as follows :—

	Inquest cases.	Uncertified deaths.
Accidental suffocation	15	..
Asphyxia	5	5
Want of attention at birth	9	..
Congenital defects	3	..
Suffocation—Open verdict	5	..
Others	2	..
	*39	5

* Post-mortem examinations were made in each case.

The districts in which these deaths occurred were St. George's and Hulme, 8 each ; Openshaw, 5 ; Ancoats, West Gorton, and Chorlton-upon-Medlock, 3 each ; Bradford, Moston, Newton, Beswick, and Gorton, 2 each ; Cheetham, Clayton, Moss Side, and Levenshulme, 1 each.

Midwives Reported to the Central Midwives Board on Charges of Malpractice, Negligence, or Misconduct.

During the year the Midwives Supervising Committee, in considering the various reports submitted to them, decided that *prima facie* cases of negligence or misconduct had been established against nine midwives, and reports respecting these were forwarded to the Central Midwives Board.

The following are the charges on which such action was based :—

Midwife A failing to advise that medical aid should be called in to a case of Ophthalmia Neonatorum. Failure to take temperature and pulse of patients, and did not keep register. Owing to the serious illness of the midwife the charge was withdrawn.

Midwife B failed to advise medical aid for an infant suffering from Ophthalmia Neonatorum, and also deformity. Her name was struck off the Roll.

Midwife C failed for seven days to advise medical aid for an infant suffering from Ophthalmia Neonatorum. After giving such advice she failed to notify the Local Supervising Authority. Name struck off Roll.

Midwife D failed to advise medical aid for a woman suffering from Puerperal Fever, and an infant with Ophthalmia Neonatorum. She was severely censured by the Board, and reports at the end of three and six months regarding her conduct were requested.

Midwife E failed to notify her intention to practice, although she continued so to do. Her appliances were incomplete, and her house was dirty. No registers were kept. Name struck off Roll.

Midwife F failed to take antiseptic precautions, and failed to advise medical aid for persistent offensive Lochia and Rigors. The patient died. Name struck off Roll.

Midwife G persistently failed to keep her register and pulse and temperature books entered up. Name struck off Roll.

Midwife H failed to notify her intention to practice, although she continued so to do. Her appliances were incomplete. No registers were kept. Name struck off Roll.

Midwife I failed to advise medical aid in a case of Abortion, and a case of Ophthalmia Neonatorum. The Board requested to be furnished at the end of three and six months with reports as to her conduct.

Legal Proceedings.

No legal proceedings were taken against any midwife during the year.

Midwives who appeared before the Supervising Committee during 1913.

In addition to those midwives who were summoned to appear before the Committee, and reported thereafter to the Central Midwives Board, three were dealt with by the Supervising Committee.

Work of the Special Nurses.

During the year 1911 two Special Nurses were appointed by the Midwives Supervising Committee, one for Septic Work and the other for Non-Septic Work. Their duties were printed in the report for that year. The work done by them during the year 1913 has been tabulated, and is as follows:—

Still-births investigated	341
Deaths of newly-born infants investigated	46
Cases of Puerperal Fever nursed at home	27
Nursing visits paid to 27 cases, and to patients with raised temperatures	539
Old Puerperal Fever cases investigated to ascertain subsequent histories	102
New Puerperal Fever cases investigated to ascertain histories	90
Nursing Visits paid to cases of Eczema	13
„ „ „ cases of Mammary Abscess	103
„ „ „ an old Puerperal Fever case, with a vaginal sinus	58
„ „ „ two cases of Erysipelas	14
„ „ „ houses infected with Scarlet Fever	9
„ „ „ „ „ „ Measles	138
„ „ „ „ „ „ Diphtheria	10
Number of cases of Skin affection in newly-born infants	57
Nursing Visits paid to these 57 infants	503
Number of nursing visits paid to cases of Spina Bifida	17
Special investigation into births with a view to checking the practice of midwifery by uncertified women	355
Special investigation visit concerning medical records, including visits paid to doctors	85
Visits to cases of Ophthalmia Neonatorum (assistance rendered to Ophthalmic Nurses)	134
Nursing Visits paid for midwives during suspension and when unable to obtain a qualified substitute	68
Inquests attended with reference to deaths of newly-born children	3
Conducted one emergency case of labour	1

In addition to the above recorded visits, other visits have been paid in various districts in connection with the control of women formerly on the Midwives Roll, and also of uncertified women suspected to be practising midwifery.

During the year the work of this Department has increased, and is more complete. The work of the two Special Nurses appointed by this Committee continues to be much appreciated both by medical practitioners and by midwives. A glance at the figures on page 259 will give some idea of the amount and character of the work done by them.

The two Ophthalmic Nurses have rendered helpful services by reporting all cases of Ophthalmia Neonatorum in the practice of midwives.

It is gratifying to find that the work of the midwives, generally speaking, is of a higher standard, and they show a better knowledge of the rules of the Central Midwives Board.

Thanks are again due to the clerical staff for their most efficient help, and in special to Mr. Dunks for his assistance in compiling this report, apart from the routine work of the department.

In conclusion, the Executive Officer now takes the opportunity of expressing her gratitude for the valuable assistance and support that she has received from the Midwives Supervising Committee, from its Chairman, and from the Medical Officer of Health.

On behalf of the Committee,

A. W. CHAPMAN,

Chairman.

July 27th, 1914.

INDEX.

INDEX—*continued.*

INDEX—*continued.*